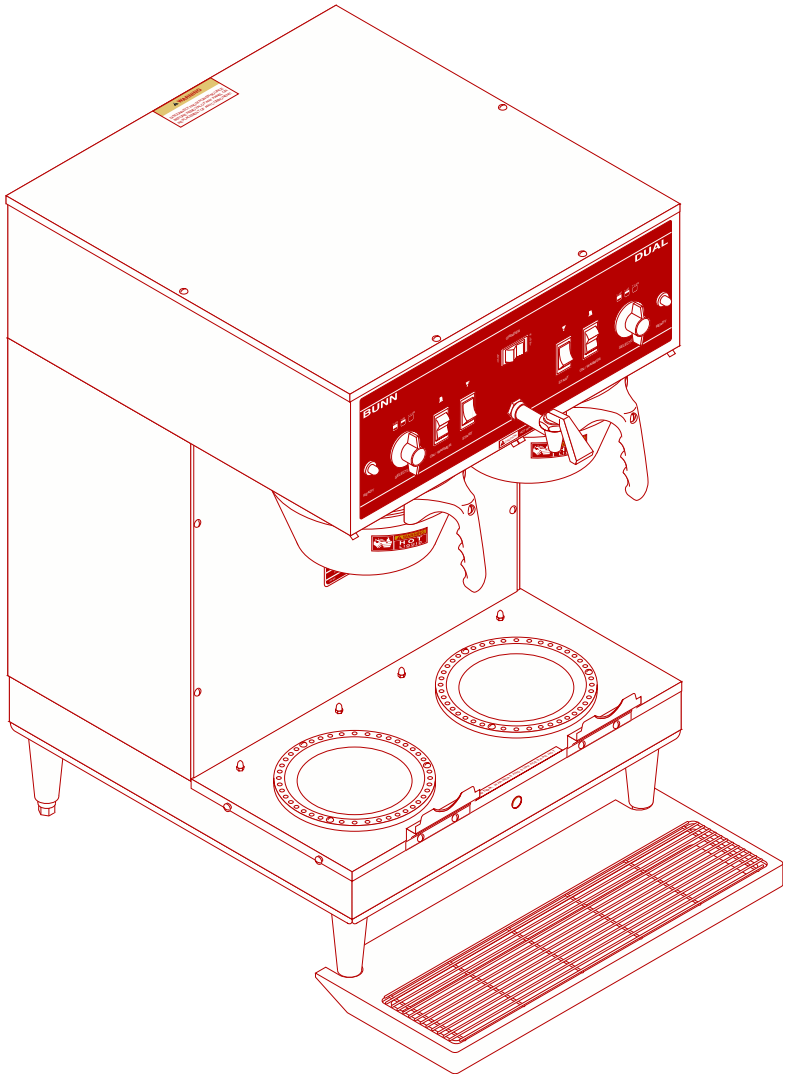
BUNN®

DUAL™

(Serial # DUAL010000 - Up)



OPERATING & SERVICE MANUAL

BUNN-O-MATIC CORPORATION

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www.bunnomatic.com

INTRODUCTION

This equipment will brew two half-gallon, gallon, or gallon and a half batches of coffee into awaiting servers at the push of a button. The brewer is also equipped with a hot water faucet for allied beverage use and is designed to interface with a BUNN® Grinder. The brewer is specifically designed for use with a BUNN® 1.5 GPR server. It is only for indoor use on a sturdy counter or shelf.

BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:
1) All equipment other than as specified below: 2 years parts and 1 year labor.
2) Electronic circuit and/or control boards: parts and labor for 3 years.
3) Compressors on refrigeration equipment: 5 years parts and 1 year labor.
4) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis: parts and labor for 3 years or 30,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

ion. Replace unreadable or damaged labels.

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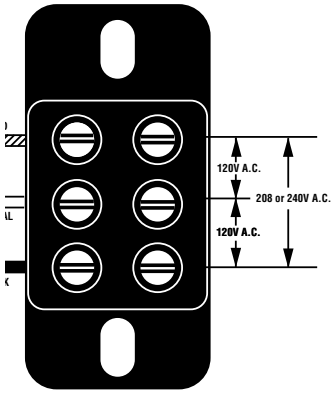
r source until specified in *Initial Set-Up.*



uires 3-wire, grounded
ice rated 120/208 or 120/
volts ac, 30 amp, single
se, 60 Hz.

Electrical Hook-Up

CAUTION – Improper electrical installation will damage electronic components.

1. An electrician must provide electrical service as specified.
2. Using a voltmeter, check the voltage and color coding of each conductor at the electrical source.
3. Remove the front panel beneath the sprayheads.
   Models with electronic control assemblies:
   Place the tank heater switch at the top of the control assembly in the "OFF" position.
   Models with electro/mechanical thermostats:
   Rotate the control thermostat knob fully counterclockwise to the "OFF" position.
4. Feed the cord through the strain relief and connect it to the terminal block.
5. Connect the brewer to the power source and verify the voltage at the terminal block before proceeding. Replace the front panel.
6. If plumbing is to be hooked up later be sure the brewer is disconnected from the power source. If plumbing has been hooked up, the brewer is ready for Initial Set-Up.

PLUMBING REQUIREMENTS

This brewer must be connected to a cold water system with operating pressure between 20 and 90 psi (138 and 620 kPa) from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi (620 kPa) to reduce it to 50 psi (345 kPa). The water inlet fitting is ¼" flare.

NOTE – Bunn-O-Matic recommends ¼" copper tubing for installations of less than 25 feet and ⅜" for more than 25 feet from the ½" water supply line. A tight coil of copper tubing in the water line will facilitate moving the brewer to clean the countertop. Bunn-O-Matic does not recommend the use of a saddle valve to install the brewer. The size and shape of the hole made in the supply line by this type of device may restrict water flow.

This equipment must be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

PLUMBING HOOK-UP

1. Flush the water line and securely attach it to the flare fitting on the strainer/flow control located on bottom of brewer.
2. Turn on the water supply.

INITIAL SET-UP

CAUTION – The brewer must be disconnected from the power source throughout the initial set-up, except when specified in the instructions.

NOTE: ECA Models Only -This brewer is equipped with a temperature sensor that indicates when to brew and, when selected, locks-out the start of a brew cycle until the water has heated to the optimum brewing temperature.

1. Remove the front panel beneath the sprayhead.
   Models with electronic control assemblies:
   Place the tank heater switch at the top of the control assembly in the "OFF" position.
   Replace the front panel.
   Models with electro/mechanical thermostats:
   Rotate the control thermostat knob fully counterclockwise to the "OFF" position.
   Replace the front panel.
2. Connect the brewer to the power source. Water will begin flowing into the tank.
3. When water stops flowing into the tank, remove the front panel and proceed as directed:

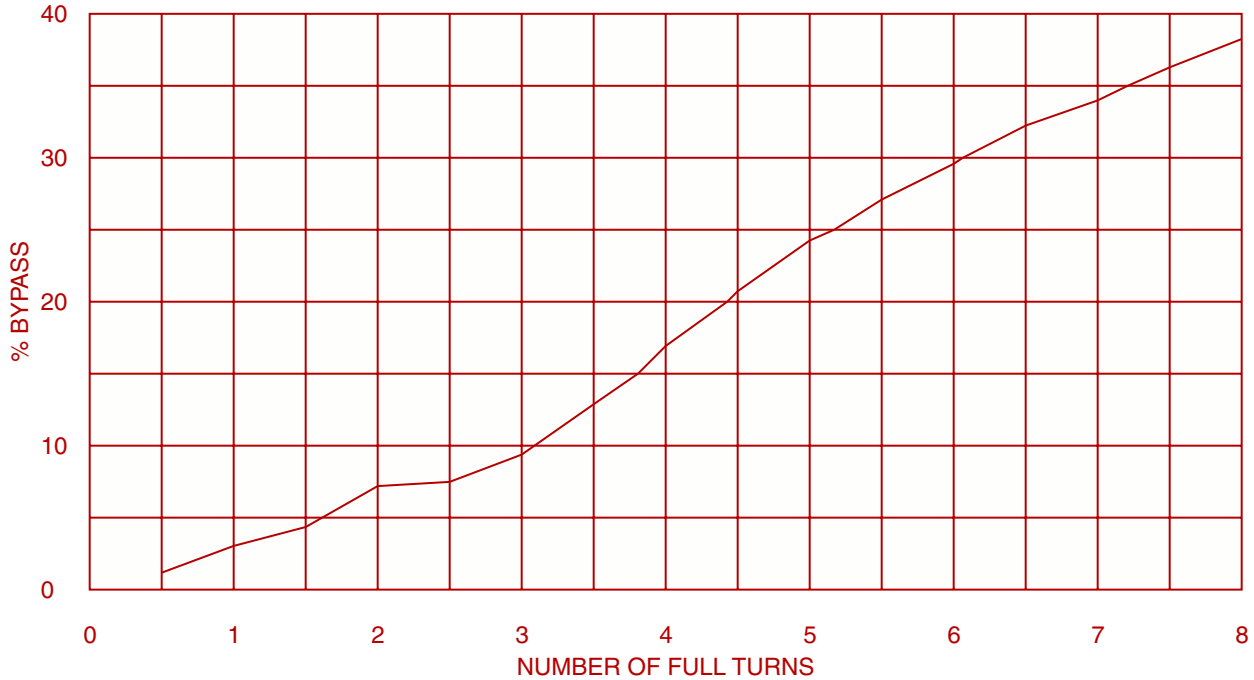
INITIAL SET-UP (cont.)

Models with electronic control assemblies:
Place the tank heater switch at the top of the control assembly in the “ON” position and replace the front panel.
Models with electro/mechanical thermostats:
Rotate the control thermostat knob fully clockwise to the “ON” position and replace the front panel.

4. Wait approximately twenty minutes for the water in the tank to heat to the proper temperature.
5. Place an empty server beneath either brew station and the ON/OFF switch in the upper ("ON") position.
6. **Triple-set Timers only:** Place the brew station Selector switch in the 1½ gallon position.
7. (A) Initiate a brew cycle; after water has stopped flowing from the funnel, place the ON/OFF switch in the lower ("OFF") position and check the water volume in the server. It should be 192 ounces (5.7 L) for 1 1/2 gallons. If not, adjust the timer as required. Refer to *Adjusting Brew Volumes*
   NOTE: Each batch setting must be adjusted individually, if they are not correct. Volumes are as follows:
   1 gallon - 128 ounces (3.8L)
   .5 gallon - 64 ounces (1.9L)
   (B) If necessary adjust the needle valve to achieve desired water volume to be bypassed around the coffee filter in the funnel.
   NOTE: To increase the water bypass turn the needle valve counterclockwise, to decrease the water bypass turn the needle valve clockwise. An adjustment of the needle valve will require a timer adjustment for volume. To determine how many turns must be performed to achieve the desired volume, use the chart below.

REFERENCE CHART

MECHANICAL BYPASS WITH ADJUSTABLE NEEDLE VALVE
BYPASS PERCENTAGE VS NUMBER OF FULL TURNS FROM MAXIMUM CLOCKWISE POSITION
SINGLE & DUAL BREWERS



NOTE: The factory bypass is set at 20%

INITIAL SET-UP (cont.)

8. Repeat step 7 until the proper water volume is achieved.
9. Repeat steps 5 through 8 for the remaining brew station.
10. The brewer is now ready for use in accordance with the coffee brewing instructions.

ADJUSTING BREW VOLUMES

CAUTION - Disconnect the power source from the brewer prior to the removal of any panel for the replacement or adjustment of any component.

NOTE: Prior to setting or modifying batch sizes, check that the brewer is connected to water supply, the tank is properly filled, and a funnel and server are in place.

1. **Modifying batch sizes.** To modify a batch volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board.
   To increase a batch size. Press and hold the START or BREW switch until three clicks are heard. Release the switch (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory) and press it again one or more times. Each time the switch is pressed, two seconds are added to the brew time period. Allow the brew cycle to finish in order to verify that the desired volume has been achieved.
   To decrease a batch size. Press and release the START or BREW switch once for every two-second interval to be removed from the total brew time period; then immediately press and hold down the START or BREW switch until three clicks are heard. Release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). Allow the brew cycle to finish in order to verify that the desired volume has been achieved.
2. **Setting batch sizes.** To set a batch volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board. Press and hold the START or BREW switch until three distinct clicks are heard, and then release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). View the level of the liquid being dispensed. When the desired level is reached, turn the ON/OFF switch to "OFF" (lower). The brewer remembers this volume and will continue to brew batches of this size until the volume setting procedure is repeated.

NOTE: When brewing coffee, batch volumes will decrease due to absorption by the coffee grounds.

3. **Setting programming disable feature.** If it becomes necessary to prevent anyone from changing brew times once programmed, you can set the SET/LOCK switch to the "LOCK" position. This will prevent any programming to be done until switch is once again placed in the "SET" position.

OPERATING CONTROLS

BREW SELECTOR SWITCH (Triple - set timer models only)

Placing the switch in the ½ Gal, 1 Gal, or 1½ Gal position selects the amount of coffee to be brewed in subsequent brew cycles. Repositioning this switch after a brew cycle has been initiated does not change the brew batch in progress.

ON/OFF SWITCH

Placing the switch in the unlighted lower position cuts power to the brew station warmer and stops brewing. Stopping a brew cycle after it has been started will not stop the flow of water from the funnel. Placing the switch in the lighted upper position supplies power to the brew station warmer and enables the brew circuit.

START SWITCH

Momentarily pressing and releasing this switch starts a brew cycle when the On/Off switch is in the lighted upper position.

GRINDER SELECTOR SWITCH

Pressing the right or left side of the switch selects the corresponding brew station.

NOTE – The On/Off switch must be in the lighted upper position to initiate and complete a brew cycle.

INITIAL SET-UP (cont.)

COFFEE BREWING

1. Select the desired batch size.
2. Insert a BUNN® filter into the funnel.
3. Pour the proper amount of fresh ground coffee into the filter and level the bed of grounds by gently shaking.
4. Slide the funnel into the funnel rails.
5. Place an empty server under the funnel.
6 Place the On/Off switch in the lighted upper position. Momentarily press and release the start switch.
7. When brewing is completed, simply discard the grounds and filter.

CLEANING

1. The use of a damp cloth rinsed in any mild, non-abrasive, liquid detergent is recommended for cleaning all surfaces on Bunn-O-Matic equipment.
2. Check and clean the sprayhead. The sprayhead holes must always remain open.

NOTE – In hard water areas, this may need to be done daily. It will help prevent liming problems in the brewer and takes less than a minute.

TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have 120 - 240 volt ac and low voltage dc potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Solenoid removal requires interrupting the water supply to the valve. Damage may result if solenoids are energized for more than ten minutes without a supply of water.
- The use of two wrenches is recommended whenever plumbing fittings are tightened or loosened. This will help avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.
- This brewer is heated at all times. Keep away from combustibles.

WARNING

- Exercise extreme caution when servicing electrical equipment.
- Disconnect the brewer from the power source when servicing, except when electrical tests are specified.
- Follow recommended service procedures.
- Replace all protective shields or safety notices.

Problem	Probable Cause	Remedy
Equipment will not operate.	1. No power or incorrect voltage.	(A1) Check the terminal block for 120 volts across the red and white terminals and the black and white terminals on 120/208 or 120/240 volt brewers. (A2) Check the terminal block for 200 volts on "B Series" brewers or 240 volts on "A Series" brewers across the red and black terminals. (B) Check circuit breakers or fuses.
Brew cycle will not start.	1. No water	Check plumbing and shut-off valves
	2. Water strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Brew cycle will not start (cont.)	3. ON/OFF switch	Refer to *Service* - ON/OFF switch for testing procedures. See page 32
	4. Start switch	Refer to *Service* - Start switch for testing procedures. See page 37
	5. Timer	Refer to *Service* - Timer for testing procedures. See page 39 or 42
	6. Dispense Valve	Refer to *Service* - Dispense valve for testing procedures. See page 22
	7. Control Assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See pages 23 thru 28
Automatic refill will not operate	1. No water	Check plumbing and shut-off valves.
	2. Water strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards brewer.
		(B) Remove the strainer/flow control and check for obstructions. Clear or replace.
	3. Solenoid Valve	Refer to *Service* - Solenoid valve for testing procedures. See page 36
	4. Limit thermostat (Electro/mechanical and Electronic)	Refer to *Service* - Limit thermostat for testing procedures. See page 31
	5. Overflow protection switch	Refer to *Service* - Overflow protection switch for testing procedures. See page 33
	6. (A) Level control board & level probe. (Electro/mechanical controlled)	Refer to *Service* - Level control board for testing procedures. See page 29
	(B) Electronic controls	Refer to *Service* - Electronic controls for testing procedures. See page 23 thru 28

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Beverage level will not adjust (Selector switch in any position)	1. Brew Selector switch	Refer to *Service* - Selector switch for testing procedures. See page 16
Water flows into tank continuously .	1. Solenoid valve	Refer to *Service* - Solenoid valve for testing procedures. See page 36
	2A. Level control board and level probe (Electro/mechanical)	Refer to *Service* - Level control board for test procedures. See page 29
	2B. Control assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See page 23 thru 28
Water flows into tank continuously (ON/OFF switch "ON").	1. Timer	Refer to *Service* - Timer for testing procedures. See page 39 or 42
	2. Overflow protection switch	Refer to *Service* - Overflow protection switch for testing procedures. See page 33
Water from tank is not hot	1. Limit thermostat **CAUTION -** Do not eliminate or bypass limit thermostat. Use only replacement part #23717.0001	Refer to *Service* -Limit thermostat for testing procedures. See page 31
05 57269435.90 Tw (Service) 4 [illegible] 2A. Control Thermostat (ETD/Redesigned) [illegible]	chanical)	
	2B. Control assembly (Electronic)	
	3. Contactor (Brewers with Recovery Booster)	
	4. Tank heaters	
	5. Triac assembly (Electronic)	

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Water from tank is not hot (cont.).	6. Relay (Brewers with Recovery Booster)	Refer to *Service* - Relay for testing procedures. See page 34
Server warmer is not hot.	1. ON/OFF switch	Refer to *Service* - ON/OFF switch for testing procedures. See page 32
	2. Warmer element	Refer to *Service* - Warmer element for testing procedures. See page 44
Spitting or unusual steaming from sprayhead or airvents.	1A. Control thermostat (Electro/mechanical)	Refer to *Service* - Control thermostat for testing procedures. See page 20
	1B. Control assembly (Electronic)	Refer to *Service* - Control assembly for testing procedures. See page 23 thru 28
	2. Triac assembly (Electronic)	Refer to *Service* - Triac assembly for testing procedures. See page 23 thru 28
	3. Lime build-up **CAUTION -** Tank and tank components should be delimed regularly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.	Inspect the tank assembly for excessive lime deposits. Delime as required.
Inconsistent beverage level in server.	1. Strainer/flow control (.750 GPM)	(A) Direction of flow arrow must be pointing towards the brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.
	2. Improper water pressure	Check operating water pressure to the brewer. It must be between 20 and 90 psi (138 and 620 kPa) .

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Inconsistent beverage level in server (cont.).	3. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 22
Consistently high or low beverage level in server.	1. Timer adjustment	Adjust the timer as required to achieve the recommended volume for each brew cycle.
Dripping from sprayhead.	1. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 22
Water overflows filter.	1. Bypass valve	Refer to *Initial Set-Up* on page 5 step #7. For test procedures see page 15
	2. Needle Valve	Refer to *Initial Set-Up* on Page 5 step #7
	3. Type of paper filters	BUNN® paper filters should be used for proper extraction.
	4. No sprayhead	Check sprayhead
Beverage overflows server.	1. Beverage left in server	The brew cycle should be started only with an empty server under the funnel.
	2. Timer adjustment	Adjust the timer as required to achieve the recommended volume for each brew cycle. Refer to *Service* - Timer for testing procedures. See page 39 or 42
	3. Dispense valve	Refer to *Service* - Dispense valve for testing procedures. See page 22
Weak beverage.	1. Type of paper filters	BUNN® paper filters should be used for proper extraction.
	2. Coffee	A sufficient quantity of fresh drip or regular grind should be used for proper extraction.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Weak beverage (cont.)	3. Sprayhead	A clean sprayhead should be used to properly wet the bed of ground coffee in the funnel.
	4. Funnel loading	The BUNN® paper filter should be centered in the funnel and the bed of ground coffee leveled by gentle shaking.
	5. Water temperature	Empty the server, remove its cover, and place the server on the warmer. Place empty funnel over the server entrance, with ON/OFF switch in the "ON" position press the start switch and release it. Check the water temperature immediately below the sprayhead with a thermometer. The reading should not be less than 195˚F(91˚C).
Brewer is making unusual noises.	1. Solenoid (Inlet)	The nut on back of the solenoid must be tight or it will vibrate during operation
	2. Plumbing lines	Plumbing lines should not be resting on the counter top.
	3. Water supply	(A) The brewer must be connected to a cold water line. (B) Water pressure to the brewer must not be higher than 90 psi (620 kPa). Install a regulator if necessary to lower the working pressure to approximately 50 psi (345 kPa).
	4. Tank Heaters	Remove and clean lime off tank heaters.
	5. Contactor	Check for low voltage

SERVICE

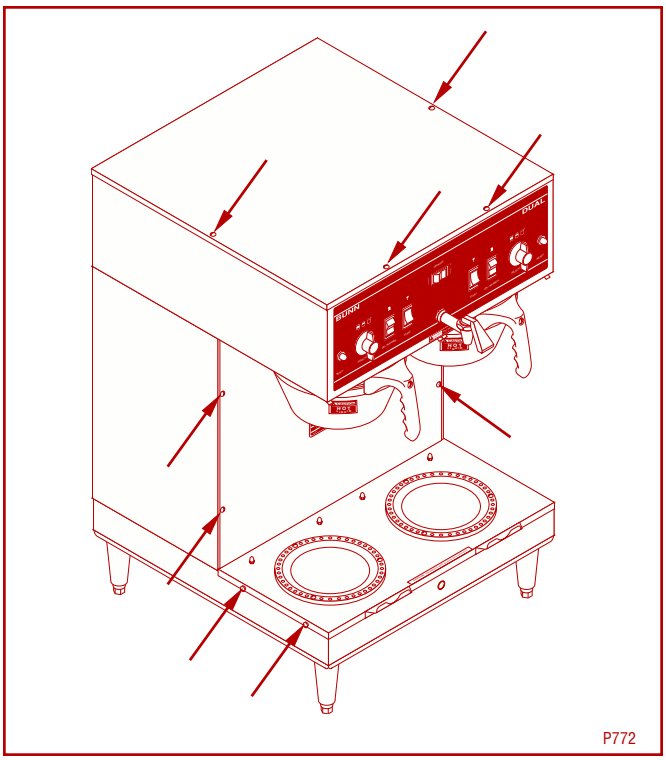
This section provides procedures for testing and replacing various major components used in this brewer should service become necessary. Refer to *Troubleshooting* for assistance in determining the cause of any problem.

WARNING - Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel. The brewer should be unplugged when servicing, except when electrical tests are required and the test procedure specifically states to plug in the brewer.

COMPONENT ACCESS

WARNING - Unplug the brewer before the removal of any panel or the replacement of any component.

All components are accessible by the removal of the top cover, front inspection panel and warmer base plate.



The top cover is attached with four #4-40 slotted head screws.

The front inspection panel is attached with five #6-32 slotted head screws.

The warmer base is attached with four #6-32 slotted head screws.

Contents

Brewer Selector Switch 16
Bypass Valve 15
Contactor Assembly 18
Control Thermostat 20
Dispense Valve 22
Electronic Control ..... 23 thru 28
Grinder Selector Switch 28
Level Control Board and Level Probe 29
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ON/OFF Switch (Warmer) 32
Overflow Protection Switch 33
Relay 34
Solenoid 36
Start Switches (Brew) 37
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Timers (Early Models) 39
Digital Timer (Late Models) 42
Warmer Elements 44
Wiring Diagrams 45

SERVICE (cont.)

BREW SELECTOR SWITCH

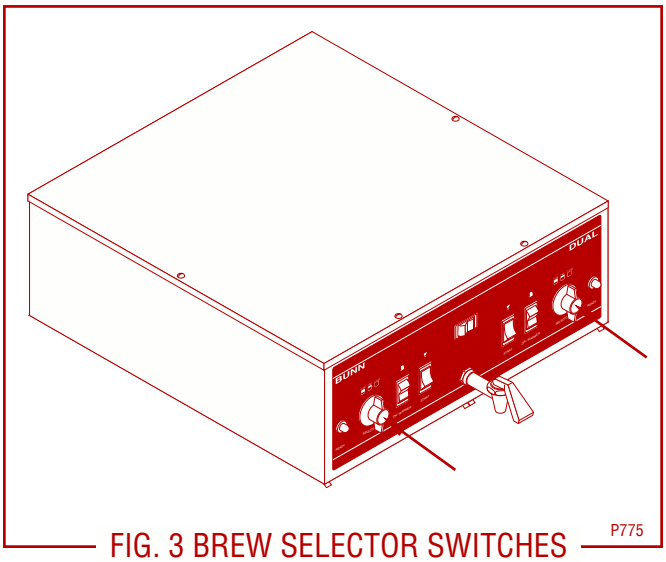

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FIG. 3 BREW SELECTOR SWITCHES

Location:

The brew selector switches are located in the front left and right side of the hood.

Test Procedure:

1. Disconnect the brewer from the power supply.
2. Separate the connector on the selector switch harness from the brew timer circuit board.
3. Carefully slide the plastic cover off of the connector from the switch harness.
4. Check for continuity across the pink and tan wires on the connector when the switch is in the 1/2 gallon position. Continuity must not be present in any other switch position.
5. Check for continuity across the pink wire and gray wire when the switch is in the 1 gallon position. Continuity must not be present in any other position.
6. Reattach the connector to the brew timer circuit board.
7. Disconnect the gray wire from the left or right selector switch and gray wire from the interface socket.
8. Check for continuity across the gray wires.
9. Reconnect the gray wires from the selector switches and the interface socket.
10. Disconnect the pink wire from the left or right selector switch to the grinder switch.
11. Check for continuity across the pink wire and the terminal on the grind switch.
12. Reconnect the pink wire to the grind switch.
13. Disconnect the tan wire from the left or right selector switch and tan wire from interface socket.
14. Check for continuity across the tan wires.
15. Reconnect the tan wires.
16. With the selector switch set at 1 and 1-1/2 gallon, disconnect the white/violet from the bypass valve.
17. Check for continuity across the white/violet wire and terminal on bypass valve.
18. Reconnect the white/violet wire to the terminal on the bypass valve.
19. Disconnect the white/red wire from the dispense valve.
20. Check for continuity across white/red wire and terminal on dispense valve.
21. Reconnect white/red wire to the terminal on the dispense valve.

If continuity is present as described the switch is operating properly.
If continuity is not present as described replace switch assembly.

Removal and Replacement:

1. Disconnect the connector on the selector switch harness from the brewer timer circuit board.
2. Disconnect wires from the selector switch, interface socket, dispense valve and bypass valve.
3. Loosen the set screw on the switch knob.
4. Remove the 9/16" nut and washer holding the switch to the hood.
5. Remove the switch.
6. Install the new switch. The positioning tab must be in the hole in the hood for proper switch and knob alignment.
7. Install the knob so that the arrow lines up in the 1-1/2 gallon position when the switch is turned to the full right position.
8. Reattach the connector to the brew timer circuit board.
9. Refer to Fig. 4 when reconnecting the wires.

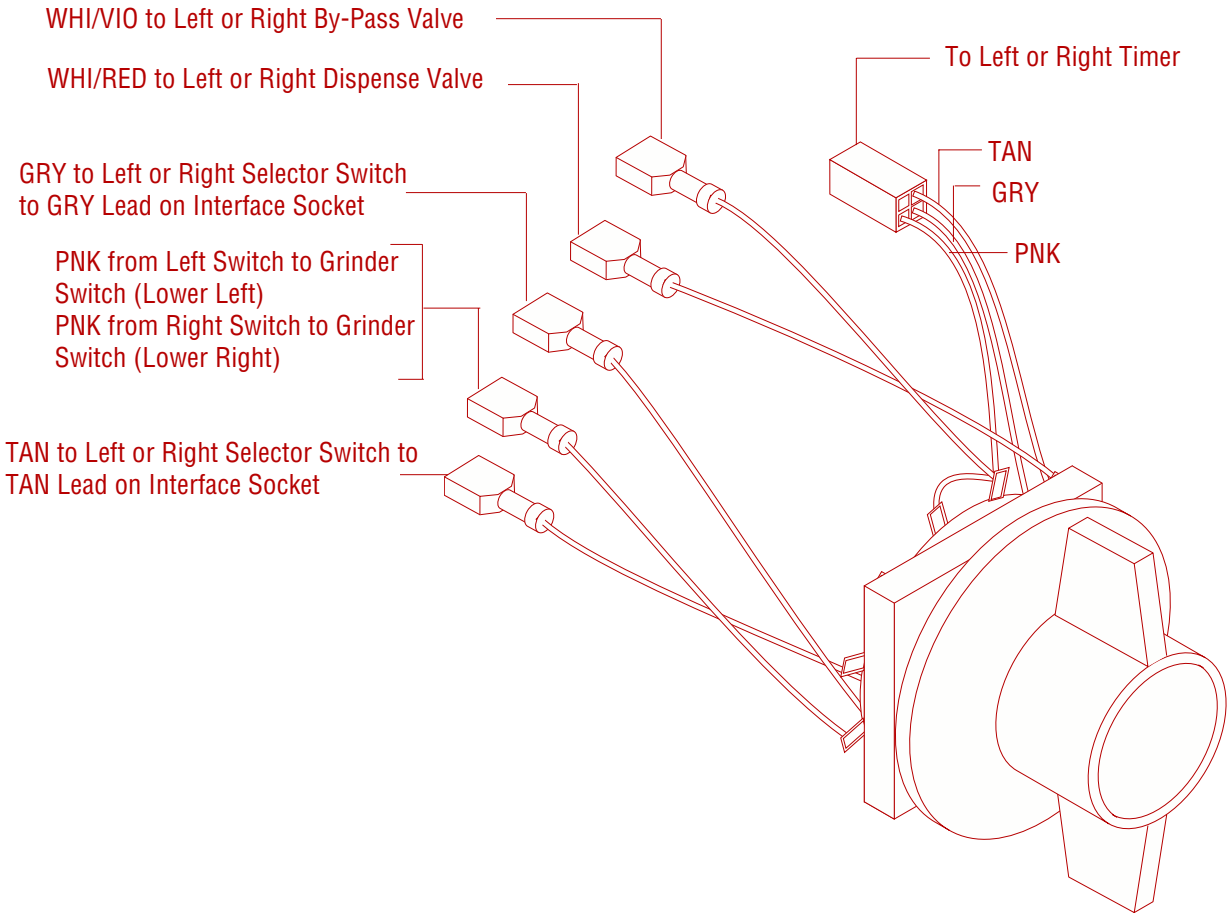
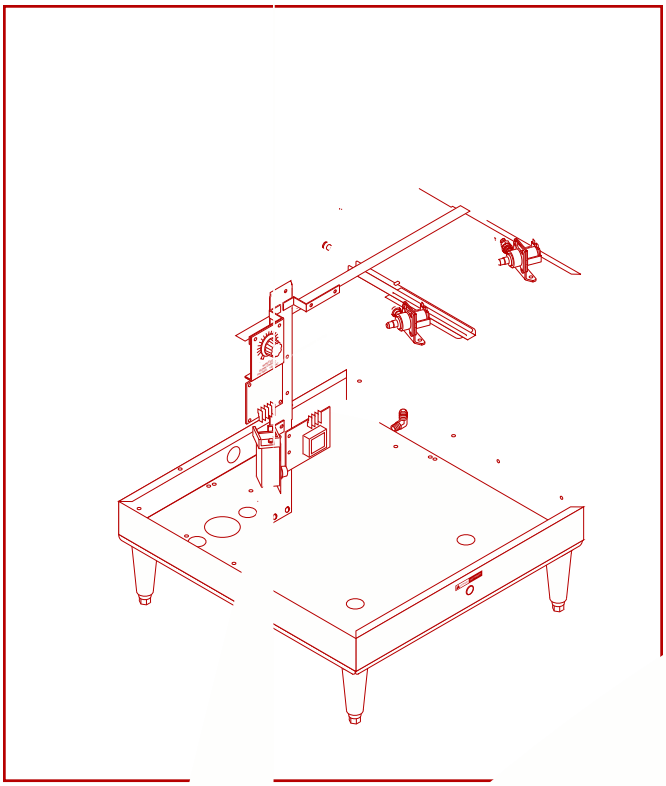

WHI/VIO to Left or Right By-Pass Valve
WHI/RED to Left or Right Dispense Valve
GRY to Left or Right Selector Switch to GRY Lead on Interface Socket
PNK from Left Switch to Grinder Switch (Lower Left)
PNK from Right Switch to Grinder Switch (Lower Right)
TAN to Left or Right Selector Switch to TAN Lead on Interface Socket
To Left or Right Timer
TAN
GRY
PNK
P776

FIG. 4 BREW SELECTOR SWITCH TERMINALS

SERVICE (cont.)

CONTACTOR ASSEMBLY



Location:

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Test Proced

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wire from t on 120/208,
240 volt units om 200 or 240
units and th rom the control
ostat when stat is turned clock-
o the "FULL C on. Connect the brewer
ne power sour e indication must be:

a.) 120 volts ac for e wire 120/208 volt models and three wire 12 240 volt models.

b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

5. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #6.
If voltage is not present as described, refer to the *Wiring Diagrams* and check the brewer wiring harness.

6. Check for continuity between the two black wires of the contactor coil.

If continuity is present as described, reconnect one black wire to red or white wire from the terminal block and the other black wire t n the control thermost nto the tank to a d to #7.
If c , replace the

 l terminal and black
 the contactor.
 y check the voltage across
 es. The indication must be:
 hree wire 120/208 volt models
ac for three wire 120/240 volt

 40 volts ac for two wire 200 or 240 volt

 nect the brewer from the power source.

 tage is present as described, proceed to #10.
voltage is not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

10. Check for continuity across the terminals on the left side of the contactor by manually closing the contacts. Continuity must not be present when the contact is released.
11. Check for continuity across the terminals on the right side of the contactor by manually closing the contacts. Continuity must not be present when the contact is released.

If continuity is present as described, the contactor is operating properly.
If continuity is not present as described, replace the contactor.

SERVICE (cont.)

CONTACTOR ASSEMBLY (cont.)

Test Procedures :

Electronic Control (Brewers w/Recovery Booster)

1. Disconnect the brewer from the power source.
2. Disconnect the gray wire from the black wire on the rear of the contactor coil and white /brown wire from the black wire on the front of the contactor coil.
3. With a voltmeter, check the voltage across the gray wire and white/brown wire with both "ON/OFF" switches in the "ON" position. Connect the brewer to the power source and press both start switches. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect the brewer from the power source.

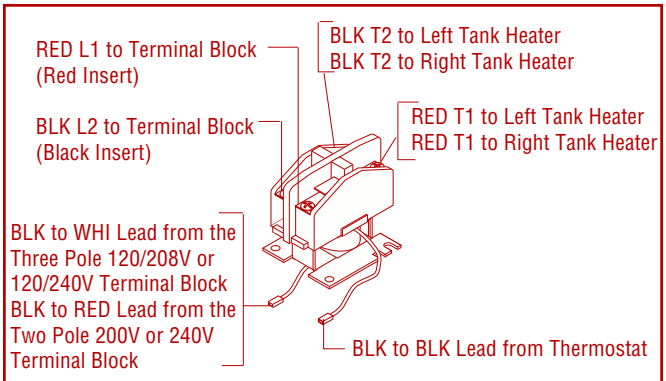
If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

5. Disconnect the blue and red wires from the contactor terminals. Check for continuity across the terminals of the contactor by manually closing the contacts. Continuity must not be present when the contact is released.

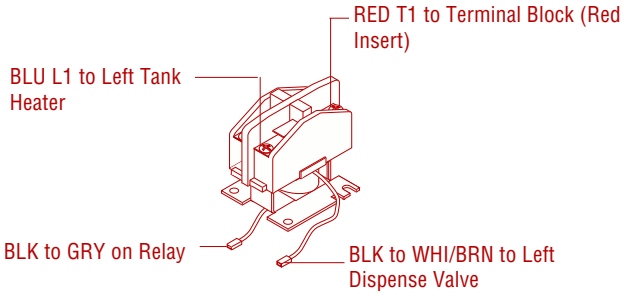
If continuity is present as described, reconnect the blue and red wires to the contactor terminals. Connect one black lead from the contactor coil to the gray wire and the white/brown wire to the remaining black lead of the contactor coil. The contactor is operating properly.
If continuity is not present as described, replace the contactor.

Removal and Replacement:

1. Remove all wires from the contactor.
2. Remove the two #10-32 slotted head screw securing contactor to the inside of the hood.
3. Securely install the new contactor inside the hood.
4. Refer to Fig. 6 when reconnecting the wires.


RED L1 to Terminal Block (Red Insert)
BLK L2 to Terminal Block (Black Insert)
BLK to WHI Lead from the Three Pole 120/208V or 120/240V Terminal Block
BLK to RED Lead from the Two Pole 200V or 240V Terminal Block
BLK T2 to Left Tank Heater
BLK T2 to Right Tank Heater
RED T1 to Left Tank Heater
RED T1 to Right Tank Heater
BLK to BLK Lead from Thermostat

MECHANICAL THERMOSTAT W/RECOVERY BOOSTER

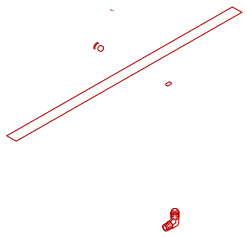


ELECTRONIC CONTROL W/RECOVERY BOOSTER

P778

FIG. 6 CONTACTOR TERMINALS

CONTROL THERMOSTAT



b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

4. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

5. Locate the black wires from the control thermostat.
6. Gently remove the capillary bulb and grommet from the tank.
7. With a voltmeter, check the voltage across the black wires of the control thermostat and the white insert on the three pole 120/208V, 120/240V terminal blocks and the red insert on two pole 200V, 240V terminal blocks when the control thermostat is turned "ON" (fully clockwise). Connect the brewer to the power source. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
   Voltage must not be indicated across these terminals when the thermostat is turned "OFF" (fully counterclockwise).
8. Disconnect the brewer from the power source.

If voltage is present as described, reinstall the capillary tube into the tank to the line 7" above the bulb, the control thermostat is operating properly.
If voltage is not present as described, replace the thermostat.

SERVICE (cont.)

CONTROL THERMOSTAT (cont.)

Removal and Replacement:

1. Remove wires from the control thermostat.
2. Remove the thermostat capillary bulb by firmly pulling up on the capillary tube at the tank lid. This will disengage the grommet from the tank lid.
3. Remove the #8-32 slotted head screw holding the control thermostat to the component bracket.
4. Slide the grommet to the line 7" above the bulb on the new capillary tube.
5. Insert the capillary bulb through the hole in the tank lid and press the grommet firmly and evenly so that the groove in the grommet fits into the tank lid.
6. Carefully bend the capillary tube so that the tube and bulb inside the tank are in the vertical position.

NOTE - The capillary tube must be clear of any electrical termination and not kinked.

7. Using a #8-32 slotted head screw fasten the control thermostat to the component bracket.
8. Refer to Fig. 8 when reconnecting the wires.
9. Adjust the control thermostat as required.

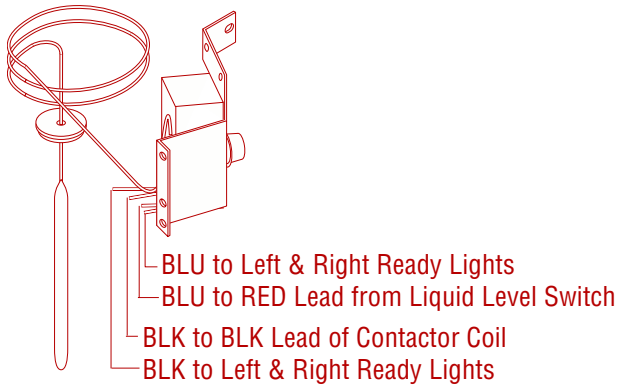
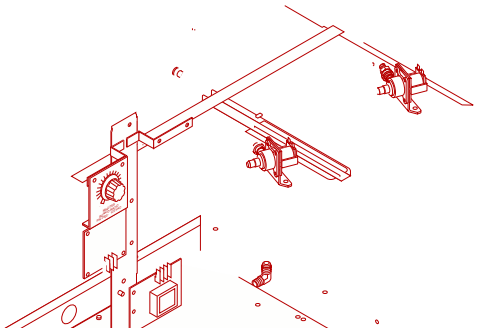

BLU to Left & Right Ready Lights
BLU to RED Lead from Liquid Level Switch
BLK to BLK Lead of Contactor Coil
BLK to Left & Right Ready Lights

FIG. 8 CONTROL THERMOSTAT TERMINALS P780



SERVICE (cont.)

ELECTRONIC CONTI

Location:

The electronic co
inside the lower left fro
the brewer. Access will a
ture sensor (8), liquid l
tank lid and to the triac a
the tank.

General:

This system
temperature of t
independently
separately.

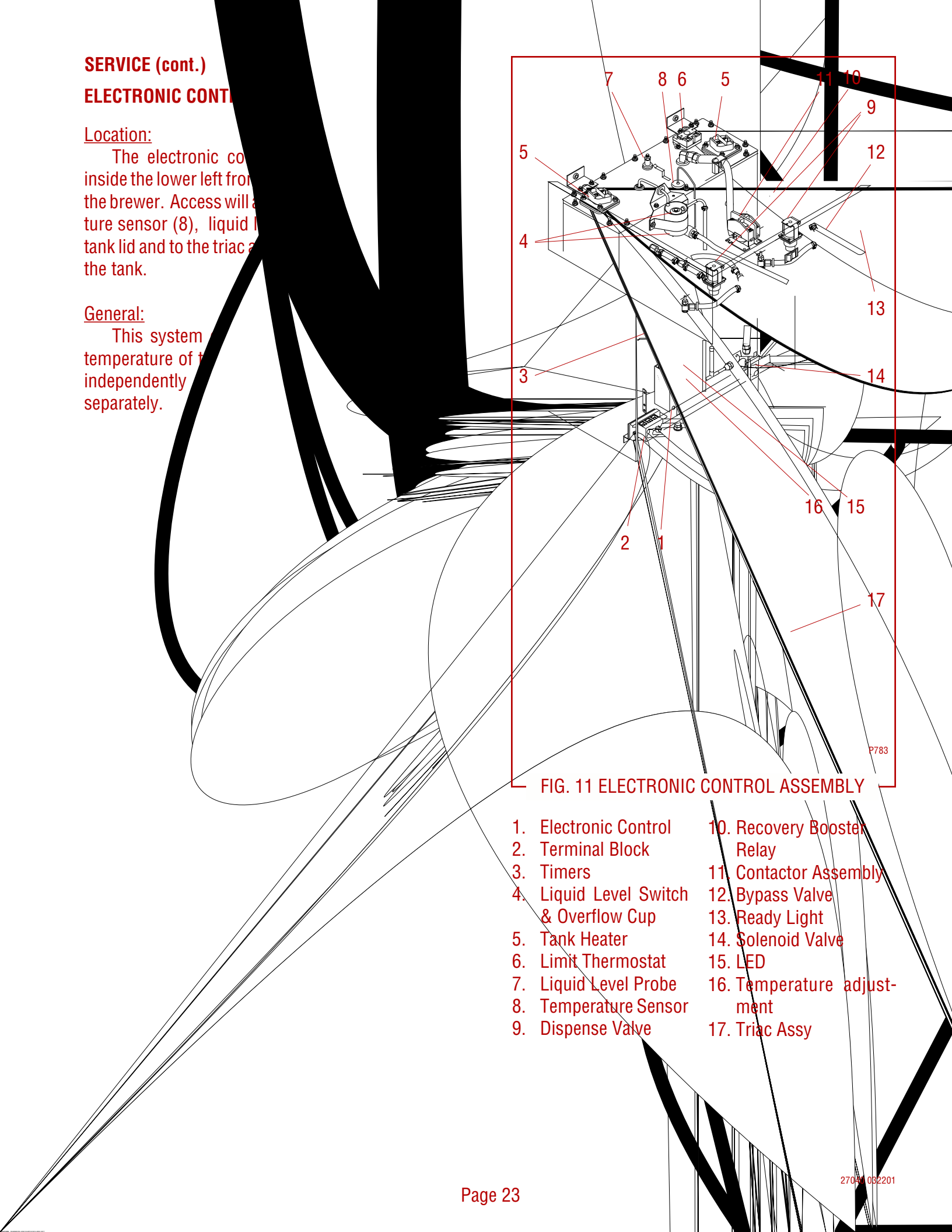


FIG. 11 ELECTRONIC CONTROL ASSEMBLY

1. Electronic Control
2. Terminal Block
3. Timers
4. Liquid Level Switch & Overflow Cup
5. Tank Heater
6. Limit Thermostat
7. Liquid Level Probe
8. Temperature Sensor
9. Dispense Valve
10. Recovery Booster Relay
11. Contactor Assembly
12. Bypass Valve
13. Ready Light
14. Solenoid Valve
15. LED
16. Temperature adjustment
17. Triac Assy

27044.082201

SERVICE (cont.)

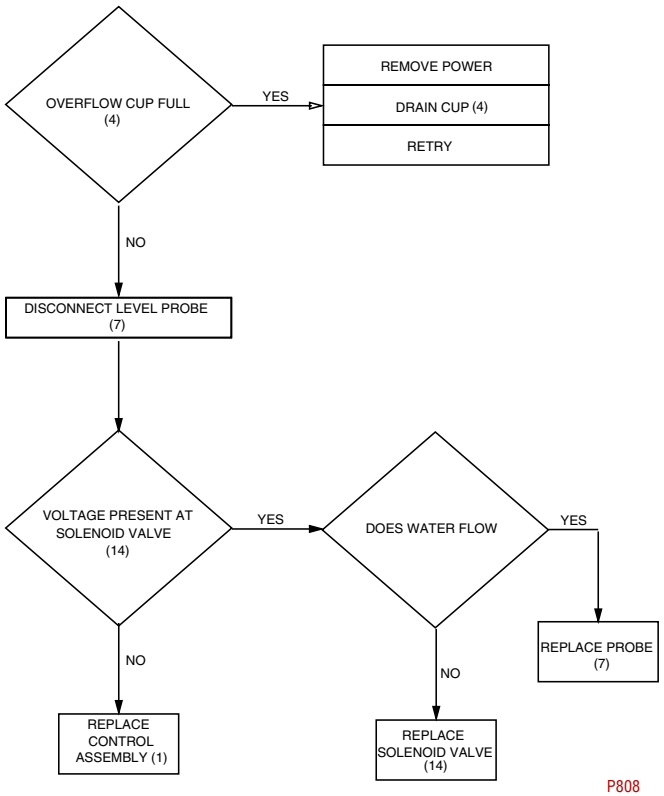
ELECTRONIC CONTROL ASSEMBLY (cont.)

BREW START- LOCK

The water must be heated to the preset temperature indicated by the glowing ready light before a brew cycle can be initiated.

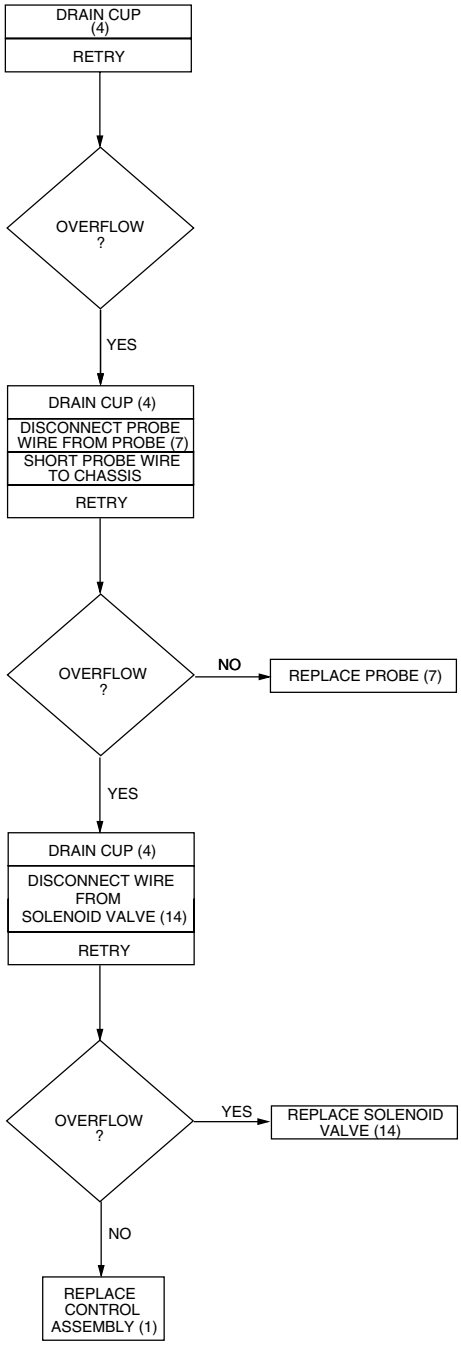
If the ready light goes out during a brew cycle, the cycle will continue until it is completed. You must wait until the ready light glows before starting another brew cycle.

PROBLEM:
LIQUID LEVEL CONTROL SYSTEM DOES NOT REFILL



P808

PROBLEM:
LIQUID LEVEL CONTROL OVERFLOWS



P809

Liquid Level Control Test Procedure:

1. Disconnect brewer from the power source.
2. With a voltmeter, check the voltage across terminals 3 & 4 of the electronic control assembly (1). Connect brewer to power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.

ELECTRONIC CONTROL ASSEMBLY (cont.)

3. Disconnect brewer from the power source.

If voltage was present as described, proceed to #4.
If voltage was not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

4. Remove the pink wire from terminal 5 of the electronic control assembly (1).
5. With a voltmeter, check the voltage across terminals 1 & 4 of the electronic control assembly (1). Connect brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models after a delay of approximately 1 second.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models after a delay of approximately 1 second.
6. Disconnect the brewer from the power source.

If voltage was present as described, the liquid level control system is operating properly, proceed to #7.
If voltage was not present as described, replace the electronic control assembly (1) and temperature sensor (8) in the tank lid.

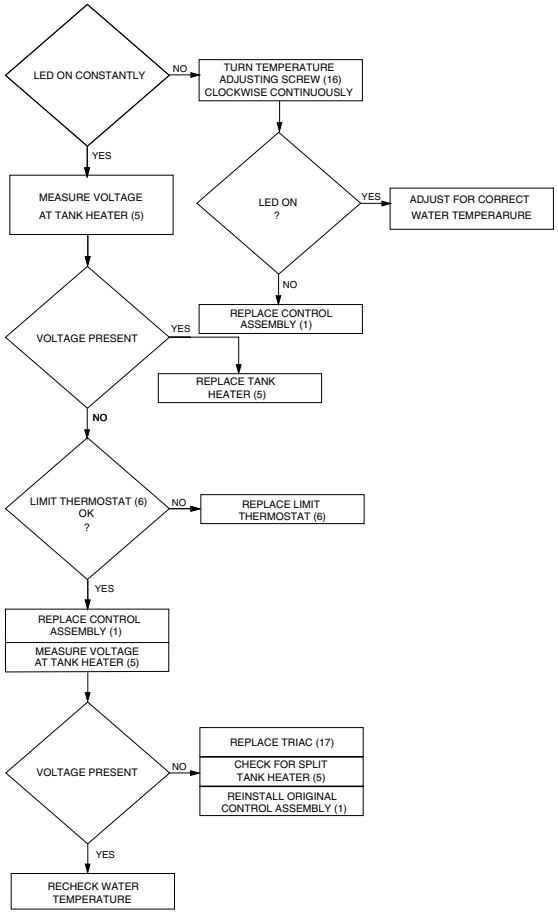
NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

7. Reconnect the pink wire to terminal 5 of the electronic control assembly (1).
8. Remove the liquid level probe (7) from the tank lid, and inspect it for mineral deposits. Replace it if necessary. Keep the exposed ends of the probe away from any metal surface of the brewer.
9. With a voltmeter, check the voltage across terminals 1 & 4 of the electronic control assembly (1). Connect the brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models after a delay of approximately 1 second.
   b.) 200 to 240 volts ac for two wire 208 or 240 volt models after a delay of approximately 1 second.
10. Touch the screw head end of the probe to the brewer housing. The indication must be 0.
11. Move the probe away from the brewer housing. The indication must again be:
    a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire120/240 volt models after a delay of approximately 1 second.
    b.) 200 to 240 volts ac for two wire 200 or 240 volt models after a delay of approximately 1 second.
12. Disconnect the brewer from the power source.

If voltage was present as described, reinstall the probe, the sensing function of the system is operating properly.
If voltage was not present as described, check the pink probe wire and the green ground wire for continuity and/or replace the probe.

<u>Temperature Control Flow Charts</u>

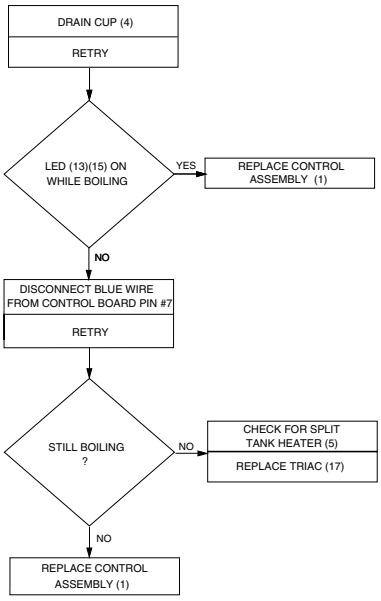
PROBLEM: WATER NOT HOT ENOUGH



P810

ELECTRONIC CONTROLS (cont.)

PROBLEM: WATER BOILS



P811

Temperature Control Test Procedure

1. Disconnect the brewer from the power source.
2. With a voltmeter, check the voltage across terminals 3 & 4 of the electronic control circuit board. Connect the brewer to the power source. The indication must be:
   a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
3. Disconnect the brewer from the power source.

If voltage was present as described, proceed to #4.
If voltage was not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

4. Connect the brewer to the power source and place the tank heater switch in the "ON" position.
5. Observe the red indicator on the electronic control circuit board (15).
6. Disconnect the brewer from the power source.

If the indicator was on or blinking, the temperature sensor is operating properly, proceed to #7.
If the indicator was off, check the sensor connection on the electronic control circuit board and/or replace the temperature sensor (8) and the electronic control assembly (1).

NOTE - each temperature sensor is calibrated to an electronic control assembly. Both components MUST be replaced as a set.

7. With a voltmeter, check the voltage across the tank heater (5) terminals. Connect the brewer to the power source. The indication must be:
   a.) 208 volts for three wire 120/208 volt models and 240 volts for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit board is on or blinking.
8. Disconnect the brewer from the power source.

If voltage was present as described, the temperature control of the system is operating properly.
If voltage was not present as described, contact Bunn-O-Matic to order an electronic control assembly (1), temperature sensor (8), and triac assembly (17) for revaluation and proceed to #9.

9. Replace the electronic control assembly (1) and temperature sensor (8).

NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

10. With a voltmeter, check the voltage across the tank heater terminals (5). Connect the brewer to the power source. The indication must be:
    a.) 208 volts ac for three wire 120/208 volt models and 240 volt ac for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
    b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit board is on or blinking.
11. Disconnect the brewer from the power source.

If voltage was present as described, return the new triac assembly (17) to Bunn-O-Matic for credit. The temperature control of the system is operating properly.
If voltage was not present as described, reinstall your existing electronic control assembly (1) and temperature sensor (8), and proceed to #12.

12. Replace the triac assembly (17).
13. With a voltmeter, check the voltage across the tank

heater terminals (5). Connect the brewer to the power source. The indication must be:
a.) 208 volts ac for three wire 120/208 volt models and 240 volts ac for three wire 120/240 volt models while the red indicator on the circuit board is on or blinking.
b.) 200 to 240 volts ac for two wire 200 or 240 volt models while the red indicator on the circuit is on or blinking.

14. Disconnect the brewer from the power source.

If voltage was present as described, the temperature control of the system is operating properly. Return the new electronic control assembly (1) and temperature sensor (8) to Bunn-O-Matic for credit.

Electronic Controls Removal and Replacement

NOTE - each electronic control assembly is calibrated to a temperature sensor. Both components MUST be replaced as a set.

1. Remove all wires from the electronic control assembly terminals.
2. Remove the two 8-32 screws holding the electronic control assembly to the component bracket.
3. Disconnect the temperature sensor and ready indicator wires from the left side of the electronic control assembly board.
4. Remove the temperature sensor from the grommet in the tank lid.
5. Install the new temperature sensor into the grommet on the tank lid. Route the wires to the location of the new electronic control assembly.
6. Attach the temperature sensor and ready indicator wires to the electronic control assembly.
7. Fasten the new electronic control assembly to its bracket.
8. Reconnect the wires.
9. Refer to Fig. 12 when reconnecting the wires.
10. Review the initial set-up procedures and adjust the control as required for the desired temperature.

Triac Assembly Removal and Replacement

NOTE - each triac installation requires the use of an approved silicone heat sink compound. Bunn-O-Matic recommends the use of Dow Corning 340 compound or equivalent. It can be purchased direct from Bunn-O-Matic (part number M2522.0002).

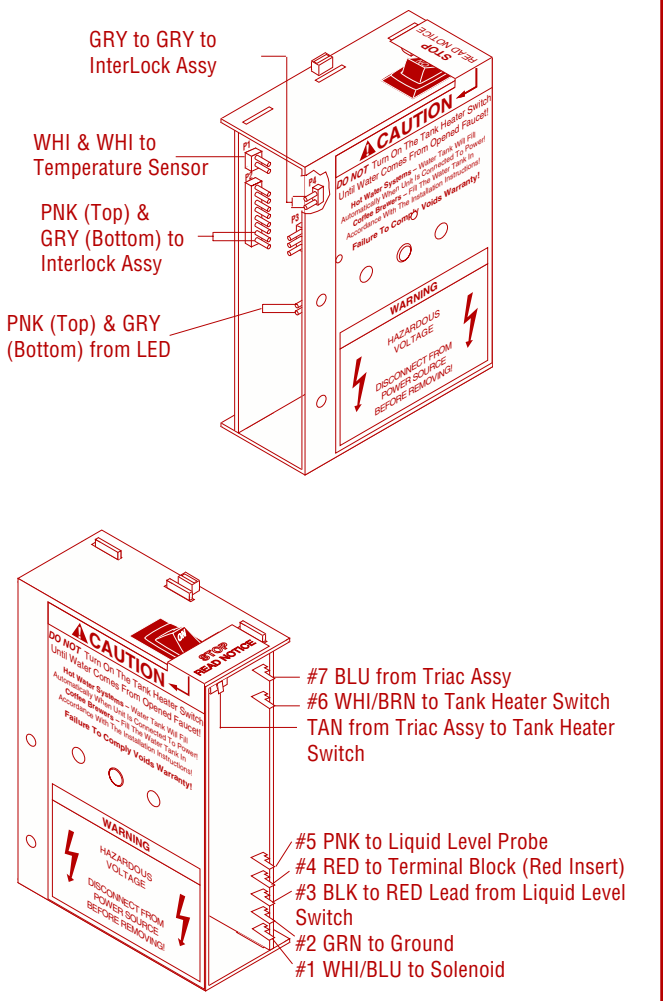

GRY to GRY to InterLock Assy
WHI & WHI to Temperature Sensor
PNK (Top) & GRY (Bottom) to Interlock Assy
PNK (Top) & GRY (Bottom) from LED
#7 BLU from Triac Assy
#6 WHI/BRN to Tank Heater Switch
TAN from Triac Assy to Tank Heater Switch
#5 PNK to Liquid Level Probe
#4 RED to Terminal Block (Red Insert)
#3 BLK to RED Lead from Liquid Level Switch
#2 GRN to Ground
#1 WHI/BLU to Solenoid
CAUTION
WARNING
HAZARDOUS VOLTAGE
DISCONNECT FROM POWER SOURCE BEFORE REMOVING!

FIG. 12 ELECTRONIC CONTROL BOARD TERMINALS P784

1. Place the tank heater switch on the electronic control assembly in the “OFF” position.
2. Completely drain the tank.
3. Place a stryofoam or wood block between the center of the tank and the rear of the brewer.
4. Disconnect triac wires, white/violet from terminal block, blue from right tank heater, blue from electronic control and tan from tank heater switch.
5. Carefully set the brewer on its back.
6. Remove the two 2" dia. hole plugs from the bottom cover.
7. Remove the four #10-32 keps nut securing tank to tank mounting bracket.
8. Remove the twelve #8-32 slotted head screws securing the bottom cover.
9. Remove the bottom cover with the four feet, the tank mounting brackets, triac/heat sink as an assembly.
10. Remove triac/heat sink from right tank mounting bracket and discard.

SERVICE (cont.)
ELECTRONIC CONTROL ASSEMBLY (cont.)

11. Install new triac/heat sink assembly on right tank mounting bracket.
12. Route the wires up around the rear of the brewer.
13. Reinstall the bottom cover, four feet, tank mounting brackets and triac/heat sink to the bottom of the tank using four #10-32 keps nuts.
14. Secure bottom cover to brewer base with twelve #8-32 slotted head screws.
15. Stand the brewer upright.
16. Reconnect the wires of the new triac assembly. Refer to Fig. 13 when reconnecting wires.

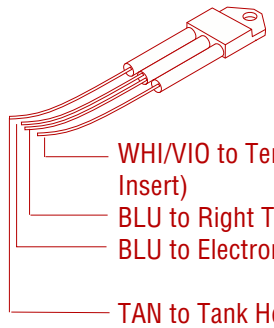

WHI/VIO to Terminal Block (200V-240V Red Insert)
BLU to Right Tank Heater (Left)
BLU to Electronic Control #7
TAN to Tank Heater Switch
P785

FIG. 13 TRIAC TERMINALS

GRINDER SELECTOR SWITCH

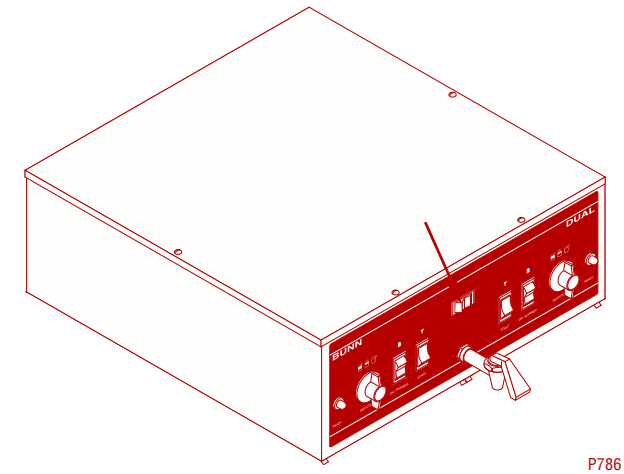


FIG. 14 GRINDER SELECTOR SWITCH

Location:

The grinder selector switch is located in the upper center on the front of the hood.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Remove all wires from the switch terminals.
3. Place the selector switch in the left position.
4 Check for continuity across the center and right terminals on the rear of the switch.
5. Continuity must not be present across the center and left terminals on the rear of the switch.
6. Check the bottom row, then the top row of terminals.

If continuity is present as described proceed to #7.
If continuity is not present as described replace the switch.

7. Place the selector switch in the right position.
8. Check for continuity across the center and left terminals on the rear of the switch.
9. Continuity must not be present across the center and right terminals on the rear of the switch.
10. Check the bottom row, then the top row.

If continuity is present as described, reconnect the wires, the switch is operating properly.
If continuity is not present as described, replace the switch.

11. Refer to Fig. 15 when reconnecting the wires.

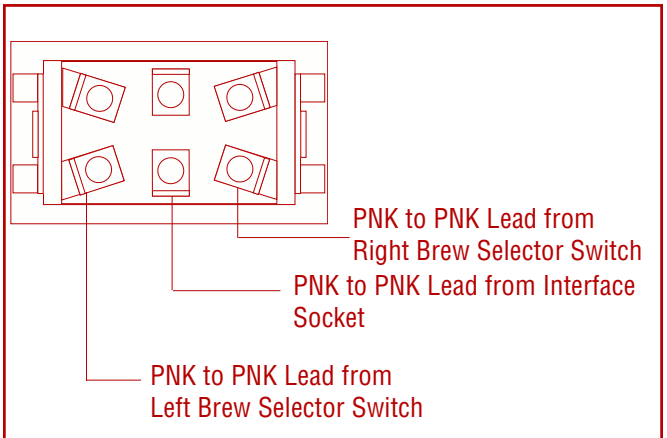

PNK to PNK Lead from Right Brew Selector Switch
PNK to PNK Lead from Interface Socket
PNK to PNK Lead from Left Brew Selector Switch
P787

FIG. 15 GRINDER SELECTION SWITCH TERMINALS

SERVICE (cont.)

LEVEL CONTROL BOARD AND LEVEL PROBE (Electro/mechanical only) (cont.)

15. Move the probe's flat end to the brewer housing. The indication must be 0.
16. Move the probe's flat end away from the brewer housing. The indication should again be:
    a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
    b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
17. Disconnect the brewer from the power source.

If voltage is present as described, reinstall the probe, the level control board and level probe are operating properly.
If voltage is not present as described, check the pink probe wire.

Removal and Replacement:

1. Remove all wires from the level control board.
2. Remove two #8-32 slotted head screws holding level control board to component bracket.
3. Install the new level control board to the component bracket. Make certain that the lockwashers are between the level control board and the component bracket.
4. Refer to Fig. 17 when reconnecting the wires.

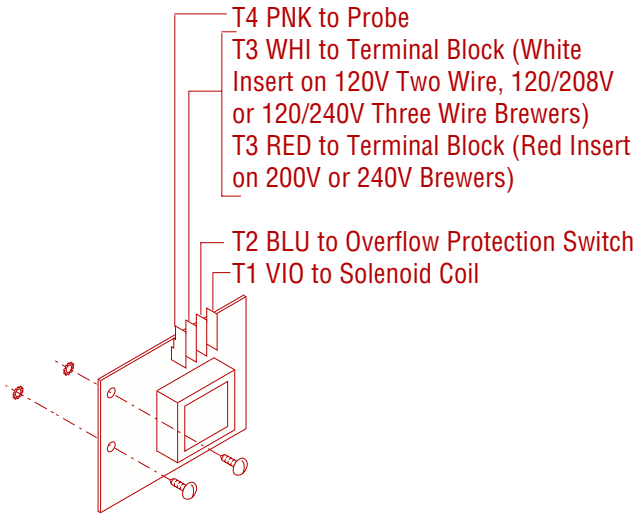

T4 PNK to Probe
T3 WHI to Terminal Block (White Insert on 120V Two Wire, 120/208V or 120/240V Three Wire Brewers)
T3 RED to Terminal Block (Red Insert on 200V or 240V Brewers)
T2 BLU to Overflow Protection Switch
T1 VIO to Solenoid Coil
P789

FIG. 17 LIQUID LEVEL CONTROL BOARD TERMINALS

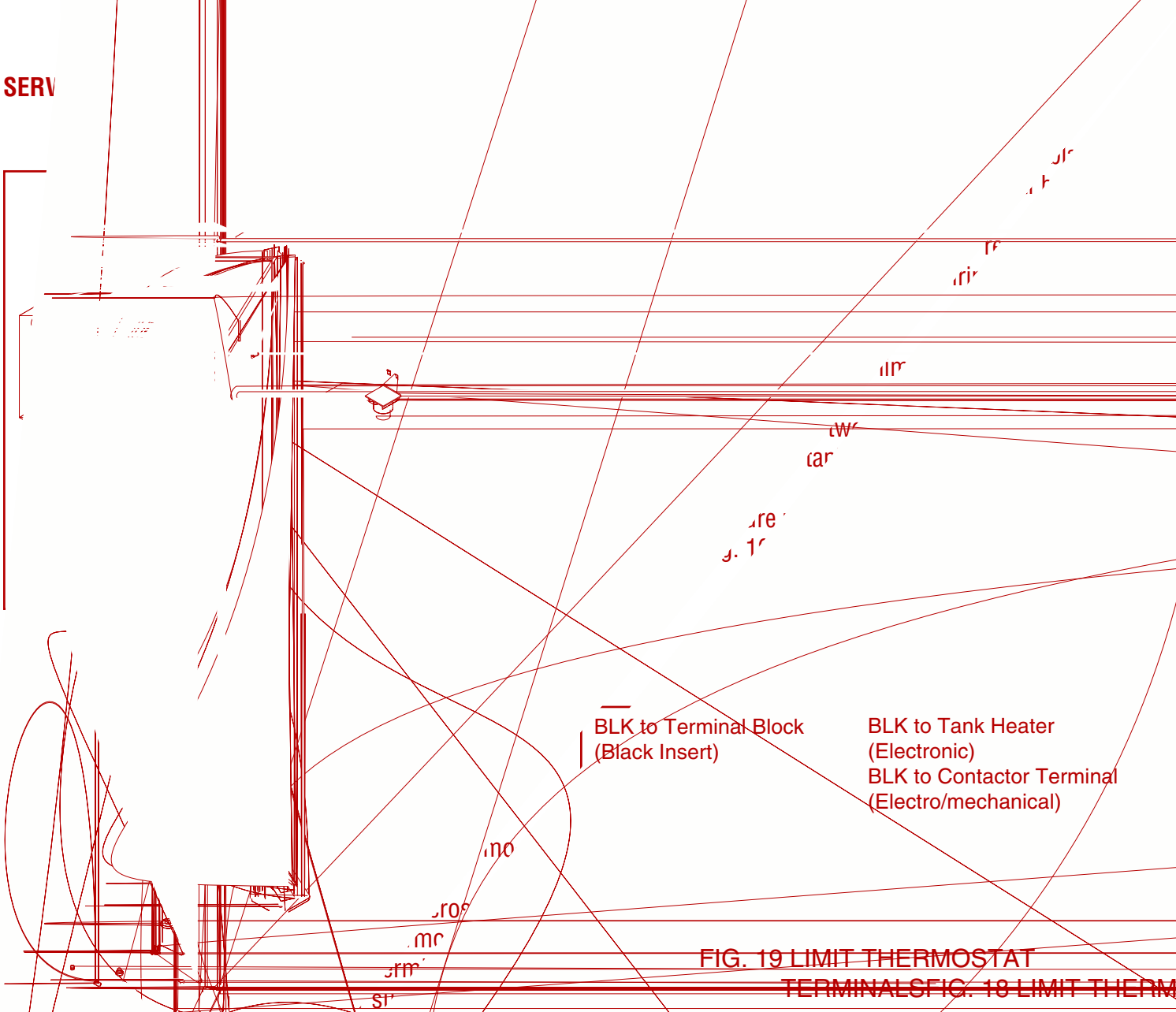


FIG. 19 LIMIT THERMOSTAT TERMINALSFIG. 18 LIMIT THERM

SERVICE (cont.)

ON/OFF SWITCH (Warmers)

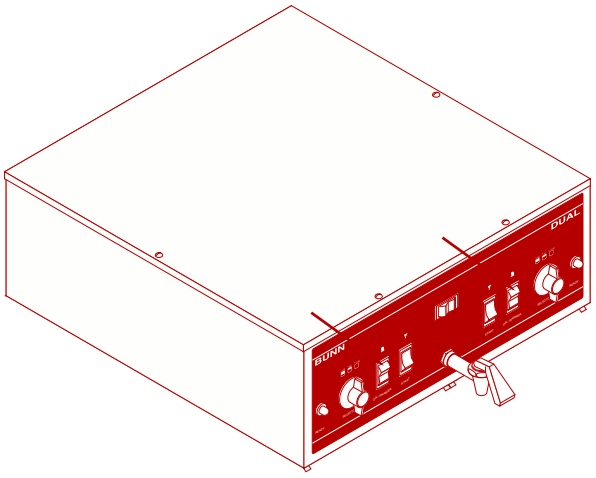


FIG. 20 ON/OFF SWITCHES

Location:

The ON/OFF switches are located on the front of the hood just to the left and right of the start switches.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Viewing the switch from the back remove the white or red wire from the upper right terminal and the black wire from the center terminal.
3. With a voltmeter, check the voltage across the white wire and the black wire or red and black wire. Connect the brewer to the power source. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect the brewer from the power source.

If voltage is present as described, reconnect the white or the red wire, and proceed to #5.
If voltage is not present as described, refer to the *Wiring Diagrams* and check the brewer wiring harness.

5. With the black wire removed, remove the white/red wire on the left switch or the white/violet wire on the right switch from the lower left terminal.
6. Check for continuity across the center and lower left terminal with switch in the "ON" position. Continuity must not be present when switch is in the "OFF" position.

If continuity is present as described, reconnect the black wire to the center terminal and the white/red wire on the left switch or the white/violet on the right switch to the lower left terminal.
If continuity is not present as described, replace the switch.

Removal and Installation:

1. Remove the wires from the switch terminals.
2. Compress the clips inside the hood and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold switch in the hood.
4. Refer to Fig. 21 when reconnecting the wires.

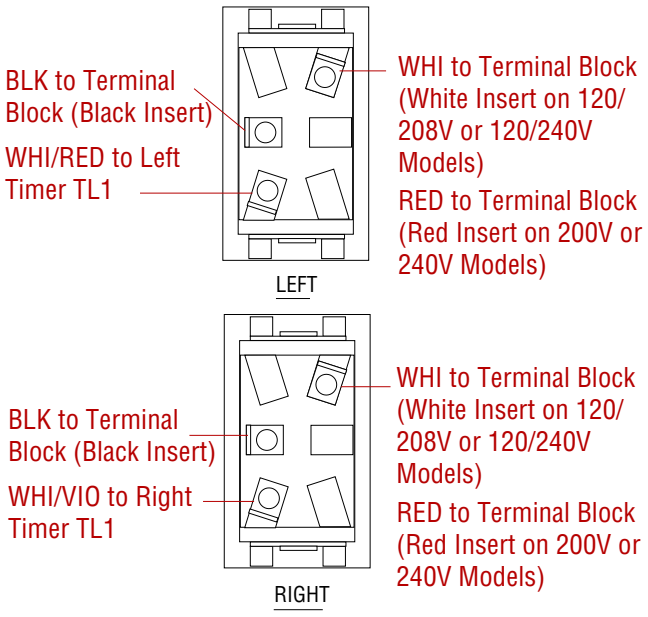
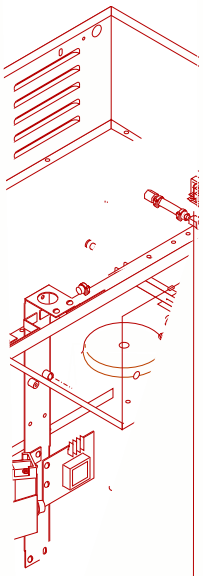
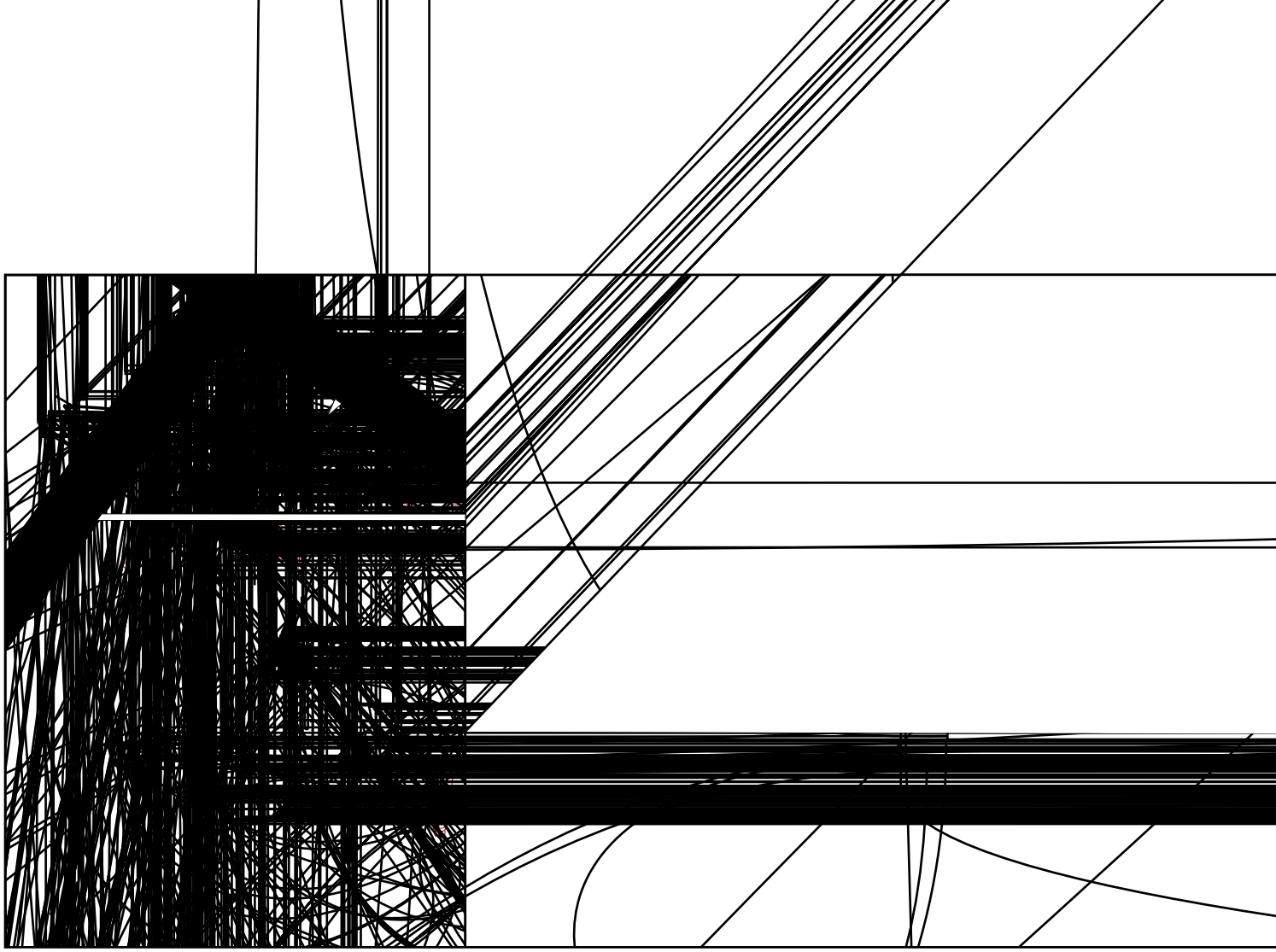

BLK to Terminal Block (Black Insert)
WHI/RED to Left Timer TL1
WHI to Terminal Block (White Insert on 120/208V or 120/240V Models)
RED to Terminal Block (Red Insert on 200V or 240V Models)
LEFT
BLK to Terminal Block (Black Insert)
WHI/VIO to Right Timer TL1
WHI to Terminal Block (White Insert on 120/208V or 120/240V Models)
RED to Terminal Block (Red Insert on 200V or 240V Models)
RIGHT
P793

FIG. 21 ON/OFF SWITCH TERMINALS



p



SERVICE (cont.)
Relay (Brewers W/Recovery Booster) (cont.)

3. Check the voltage across the gray and white/green wire with left and right "ON/OFF" switch in the "ON" position. Connect the brewer to the power source and press the left and right start switch. The indication must be:
   a.) 120 volts ac for three wire 120/208 volt models and three wire 120/240 volt models.
   b.) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect brewer from the power source.

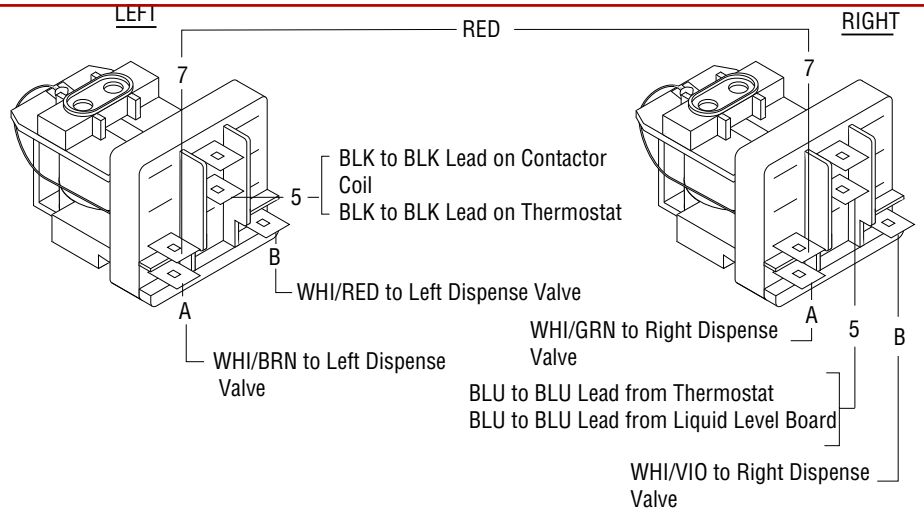
If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the *Wiring Diagrams* and check brewer wiring harness.

5. Locate the white/red wire on the relay terminal 5 and the gray wire relay terminal 7.
6. Check for continuity across the relay terminals 5 and 7 by manually closing relay contact. Continuity must not be present when contact is released.

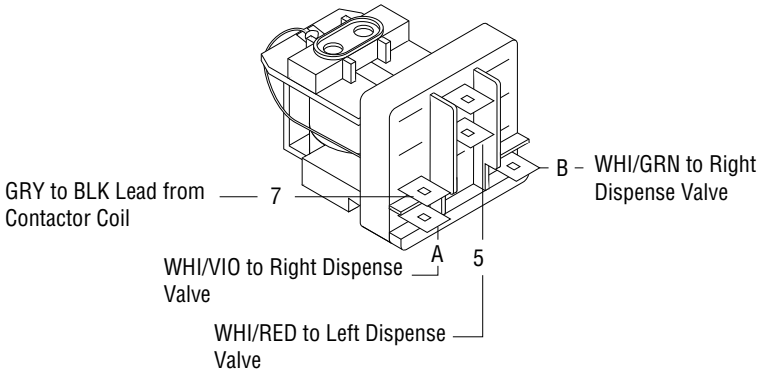
If continuity is present as described, reconnect the wires, the relay is operating properly.
If continuity is not present as described, replace the relay.

Removal and Replacement:

1. Remove all wires from relay terminals.
2. Remove the #8-32 slotted screw holding relay mounting bracket to the hood.
3. Remove the relay from the mounting bracket.
4. Securely install the new relay to the mounting bracket.
5. Install the relay mounting to the hood.
6. Refer to Fig. 25 when reconnecting the wires.



MECHANICAL THERMOSTAT W/RECOVERY BOOSTER



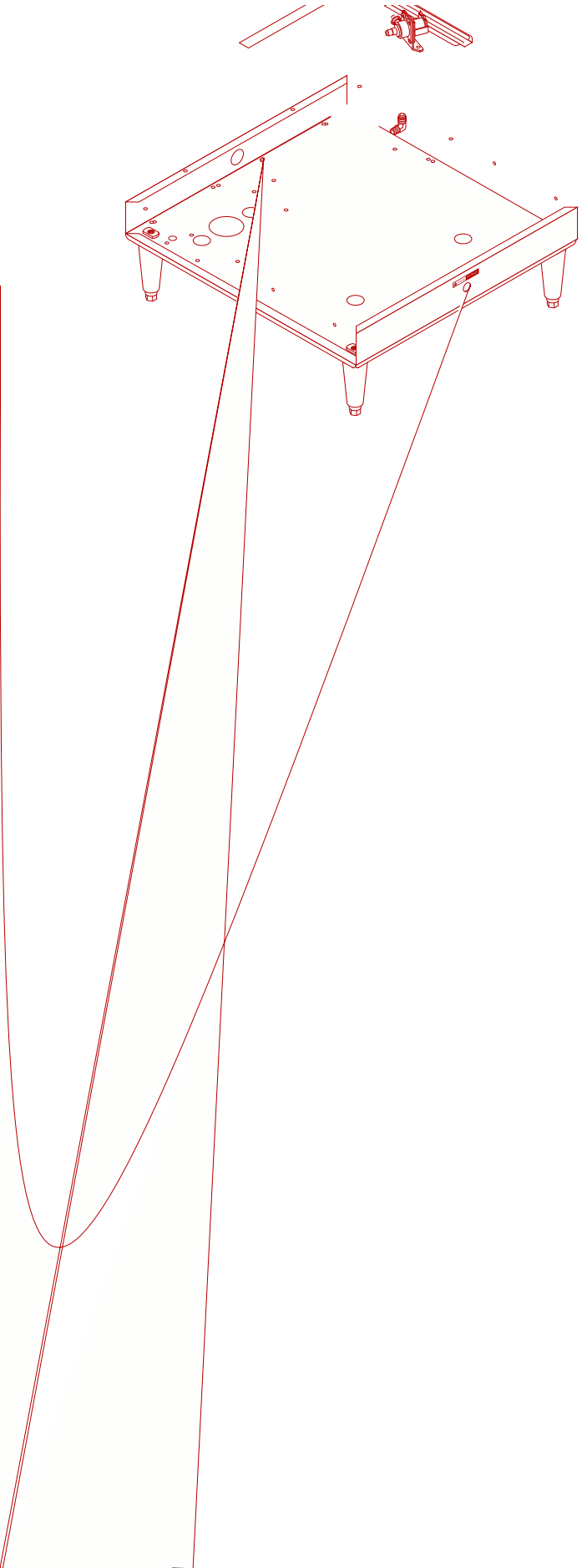
ELECTRONIC CONTROL W/RECOVERY BOOSTER

P797

FIG. 25 RELAY TERMINALS

SERVICE (cont.)

SOLENOID VALVE (Inlet)



START SWITCHES

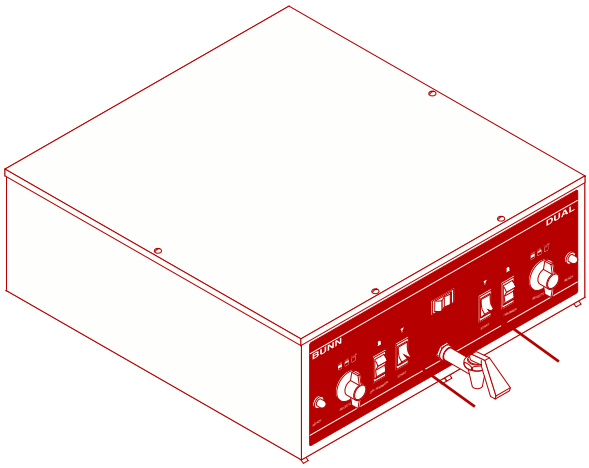


FIG. 28 START SWITCHES P792

Location:

The momentary start switches are located in front of hood just left and right of center.

Test Procedure:

1. Disconnect the brewer from the power source and remove the wires from both terminals of the switch.
2. Check for continuity across the two terminals on the switch when it is held in the lower position. Continuity must not be present across these terminals in the upper position.

If continuity is present as described, reconnect the wires, the switch is operating properly.
If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the hood and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold the switch in the hood.
4. Refer to Fig. 29 when reconnecting the wires.

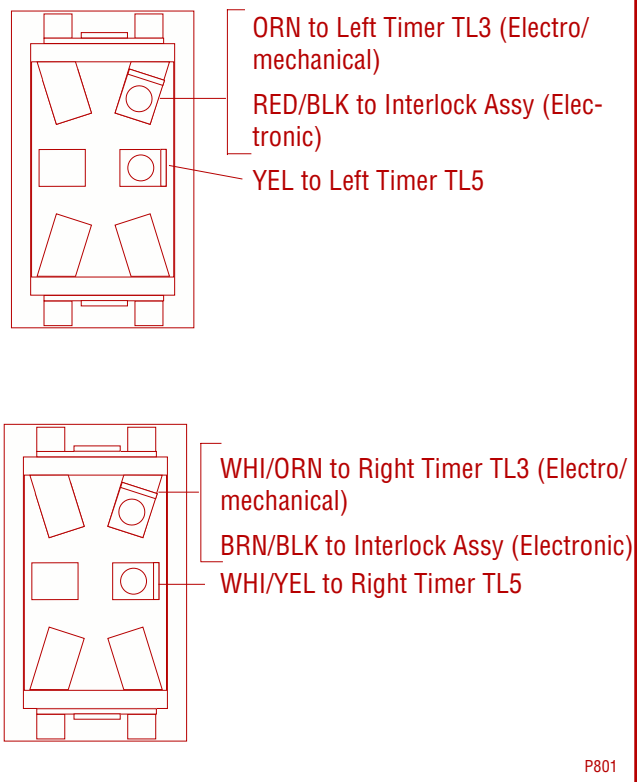
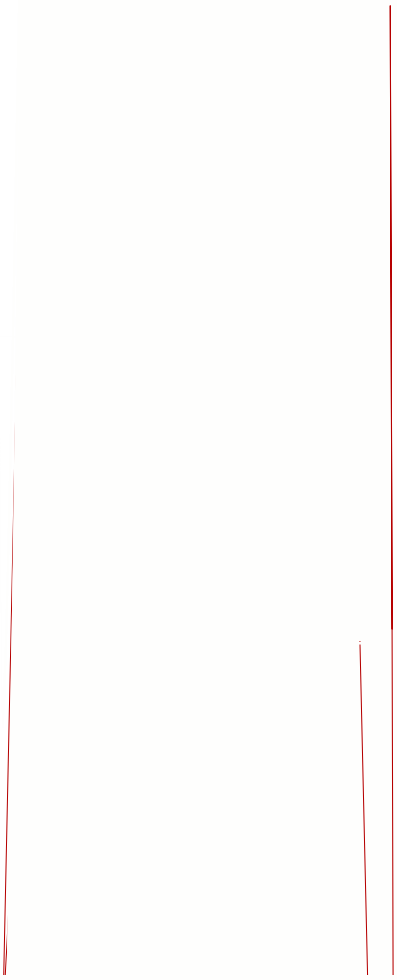

ORN to Left Timer TL3 (Electro/ mechanical)
RED/BLK to Interlock Assy (Electronic)
YEL to Left Timer TL5
WHI/ORN to Right Timer TL3 (Electro/ mechanical)
BRN/BLK to Interlock Assy (Electronic)
WHI/YEL to Right Timer TL5
P801

FIG. 29 START SWITCH TERMINALS

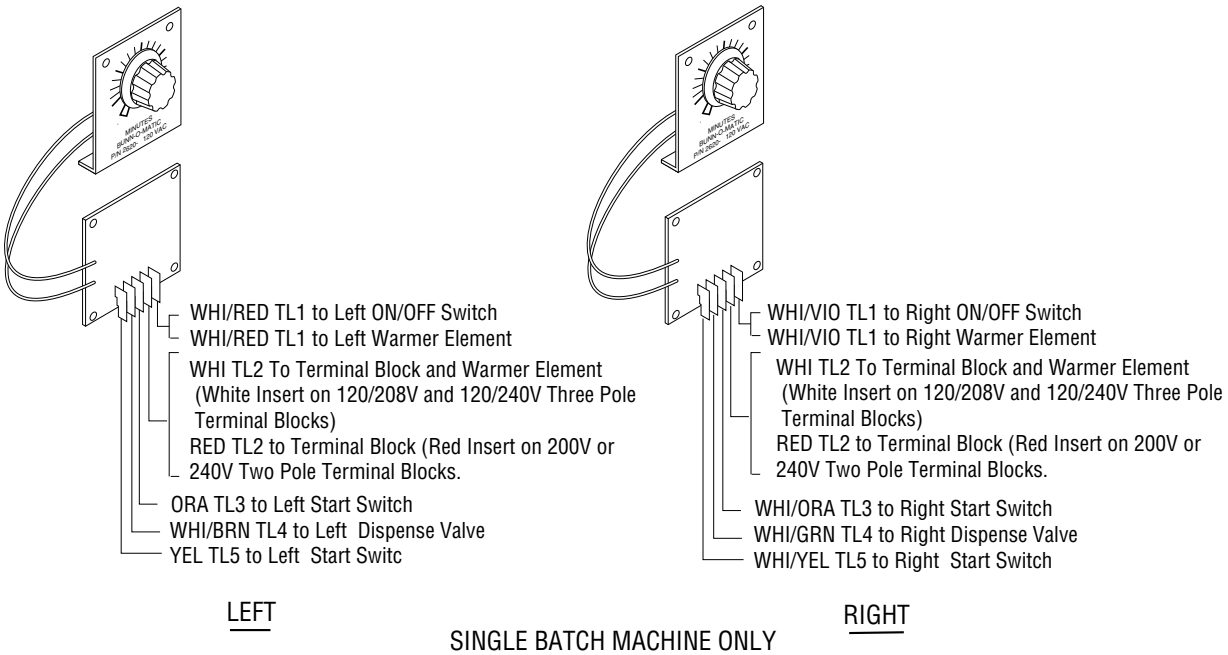
SERVICE (cont.)

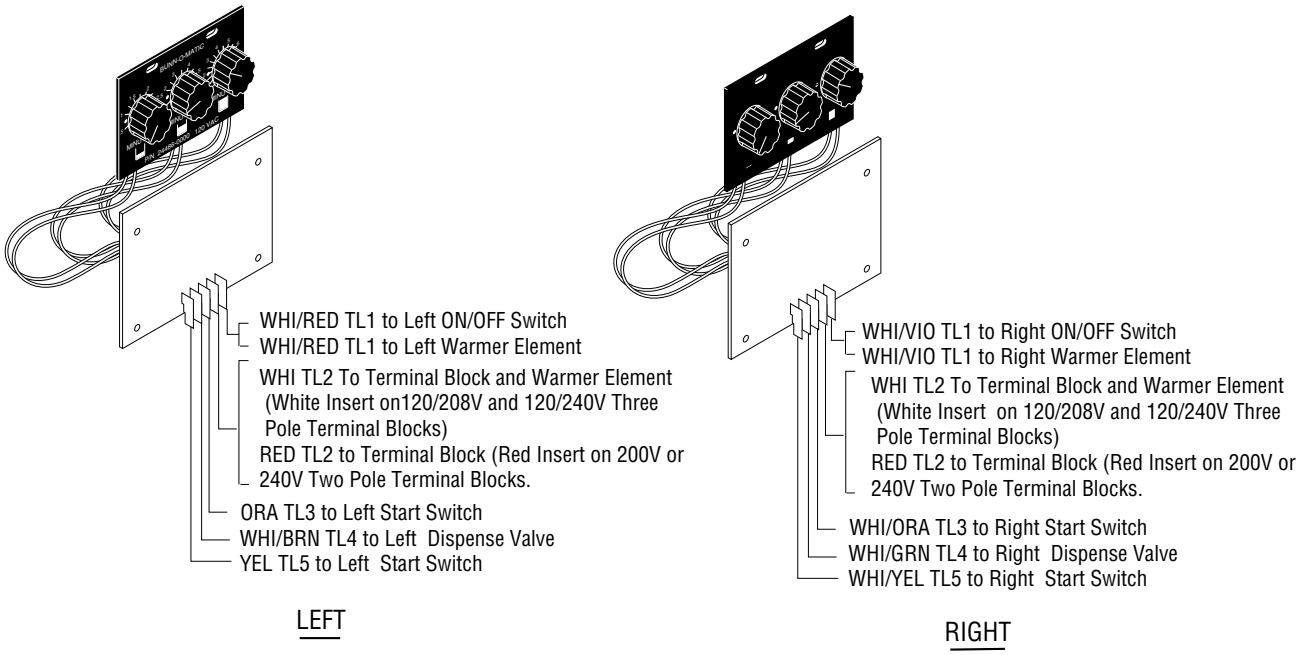
tank heater(s).

NOTE - If the tank heater remains unable to heat,



Timers (Early Models)(cont.)


WHI/RED TL1 to Left ON/OFF Switch
WHI/RED TL1 to Left Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on 120/208V and 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
ORA TL3 to Left Start Switch
WHI/BRN TL4 to Left Dispense Valve
YEL TL5 to Left Start Switc
LEFT
WHI/VIO TL1 to Right ON/OFF Switch
WHI/VIO TL1 to Right Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on 120/208V and 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
WHI/ORA TL3 to Right Start Switch
WHI/GRN TL4 to Right Dispense Valve
WHI/YEL TL5 to Right Start Switch
RIGHT
SINGLE BATCH MACHINE ONLY

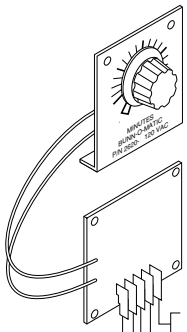

WHI/RED TL1 to Left ON/OFF Switch
WHI/RED TL1 to Left Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on120/208V and 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
ORA TL3 to Left Start Switch
WHI/BRN TL4 to Left Dispense Valve
YEL TL5 to Left Start Switch
LEFT
WHI/VIO TL1 to Right ON/OFF Switch
WHI/VIO TL1 to Right Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on 120/208V and 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
WHI/ORA TL3 to Right Start Switch
WHI/GRN TL4 to Right Dispense Valve
WHI/YEL TL5 to Right Start Switch
RIGHT

ELECTRO/MECHANICAL
(120/208V AC or 120/240V AC 3 WIRE, 200V AC or 240V AC 2 WIRE)

P805

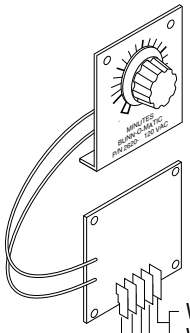
FIG. 33 TIMER TERMINALS

Timers (Early Models)(cont.)



WHI/RED TL1 to Left ON/OFF Switch
WHI/RED TL1 to Left Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on 120/208V or 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
ORA TL3 toInterlock Assy
WHI/BRN TL4 to Left Dispense Valve
YEL TL5 to Left Start Switch

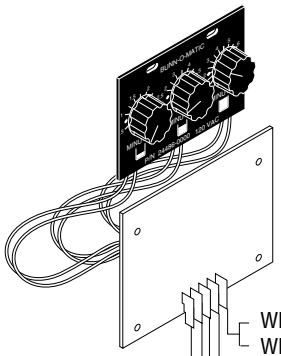
LEFT



WHI/VIO TL1 to Right ON/OFF Switch
WHI/VIO TL1 to Right Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on120/208V or 20/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
WHI/ORA TL3 to Interlock Assy
WHI/GRN TL4 to Right Dispense Valve
WHI/YEL TL5 to Right Start Switch

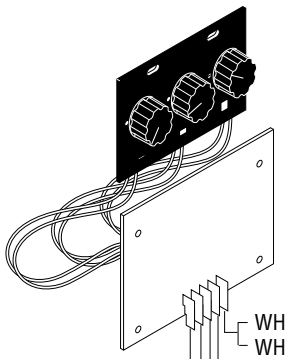
RIGHT

SINGLE BATCH MACHINE ONLY



WHI/RED TL1 to Left ON/OFF Switch
WHI/RED TL1 to Left Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on120/208V or 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
ORA TL3 to Interlock Assy
WHI/BRN TL4 to Left Dispense Valve
YEL TL5 to Left Start Switch

LEFT



WHI/VIO TL1 to Right ON/OFF Switch
WHI/VIO TL1 to Right Warmer Element
WHI TL2 To Terminal Block and Warmer Element (White Insert on 120/208V or 120/240V Three Pole Terminal Blocks)
RED TL2 to Terminal Block (Red Insert on 200V or 240V Two Pole Terminal Blocks.
WHI/ORA TL3 Interlock Assy
WHI/GRN TL4 to Right Dispense Valve
WHI/YEL TL5 to Right Start Switch

RIGHT

ELECTRONIC
(120/208V AC or 120/240V AC 3 WIRE, 200V AC or 240V AC 2 WIRE)

P847

FIG. 34 TIMER TERMINALS

SERVICE (cont.)

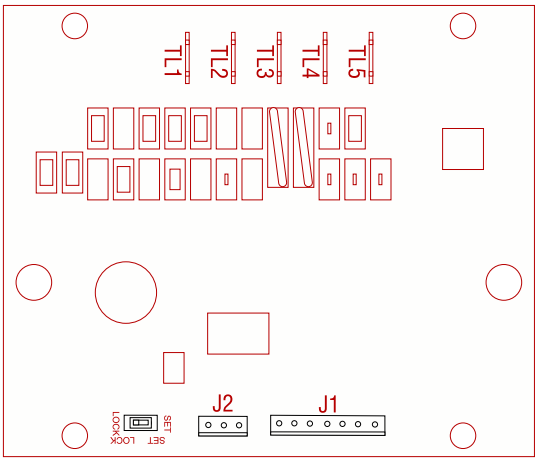
TIMERS (Late Models)(cont.)

1. **Modifying brew volumes.** To modify a brew volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board.

To increase a brew volume, place the ON/OFF switch in the "ON" position, press and hold the START switch until three clicks are heard. Release the switch and press it again one or more times. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory.) Each time the switch is pressed, two seconds are added to the brew time period. Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

To decrease a brew volume, place the ON/OFF switch in the "ON" position, press and release the START switch once for every two-second interval to be removed from the total brew time period; then immediately press and hold down the START switch until three clicks are heard. Release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

2. **Setting brew volumes.** To set a brew volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board. Place the ON/OFF switch in the "ON" position, press and hold the START switch until three distinct clicks are heard and then release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory.)
View the level of the liquid being dispensed. When the desired level is reached, turn the ON/OFF switch to "OFF".
NOTE: Several ounces of water will continue to syphon from the tank after turning the switch "OFF". The brewer remembers this volume and will continue to brew batches of this size until the volume setting procedure is repeated.
NOTE: When brewing coffee, volume will decrease due to absorption by the coffee grounds.



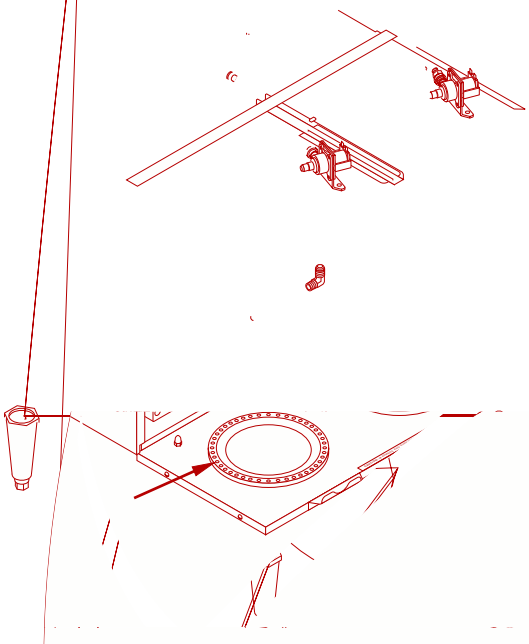
LEFT TIMER	RIGHT TIMER
YEL	WHI/YEL wire to TL5
WHI/BRN	WHI/GRN wire to TL4
ORA	WHI/ORA wire to TL3
WHI	WHI wire to TL2 (120V Two Pole, 120/208V or 120/240V Three Pole Terminal Block)
RED	RED wire to TL2 (200V or 240V Two Pole Terminal Block)
WHI/RED	WHI/VIO wire to TL1

P2037

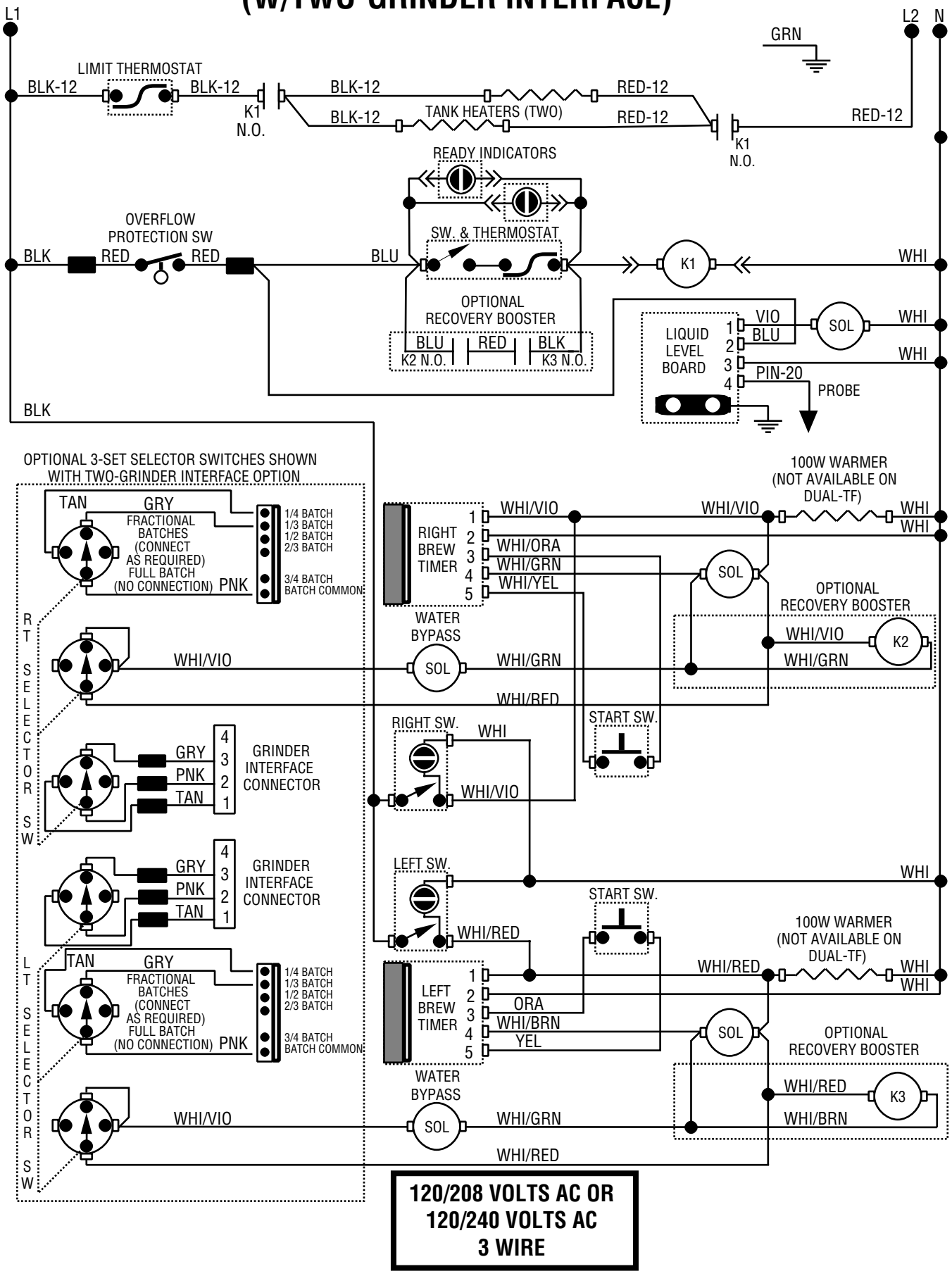
FIG. 36 DIGITAL TIMER TERMINALS

3. **Setting programming disable feature.** If it becomes necessary to prevent anyone from changing brew time once programmed, you can set the SET/LOCK switch to the "LOCK" position. This will prevent any further programming until switch is once again put into the "SET" position.

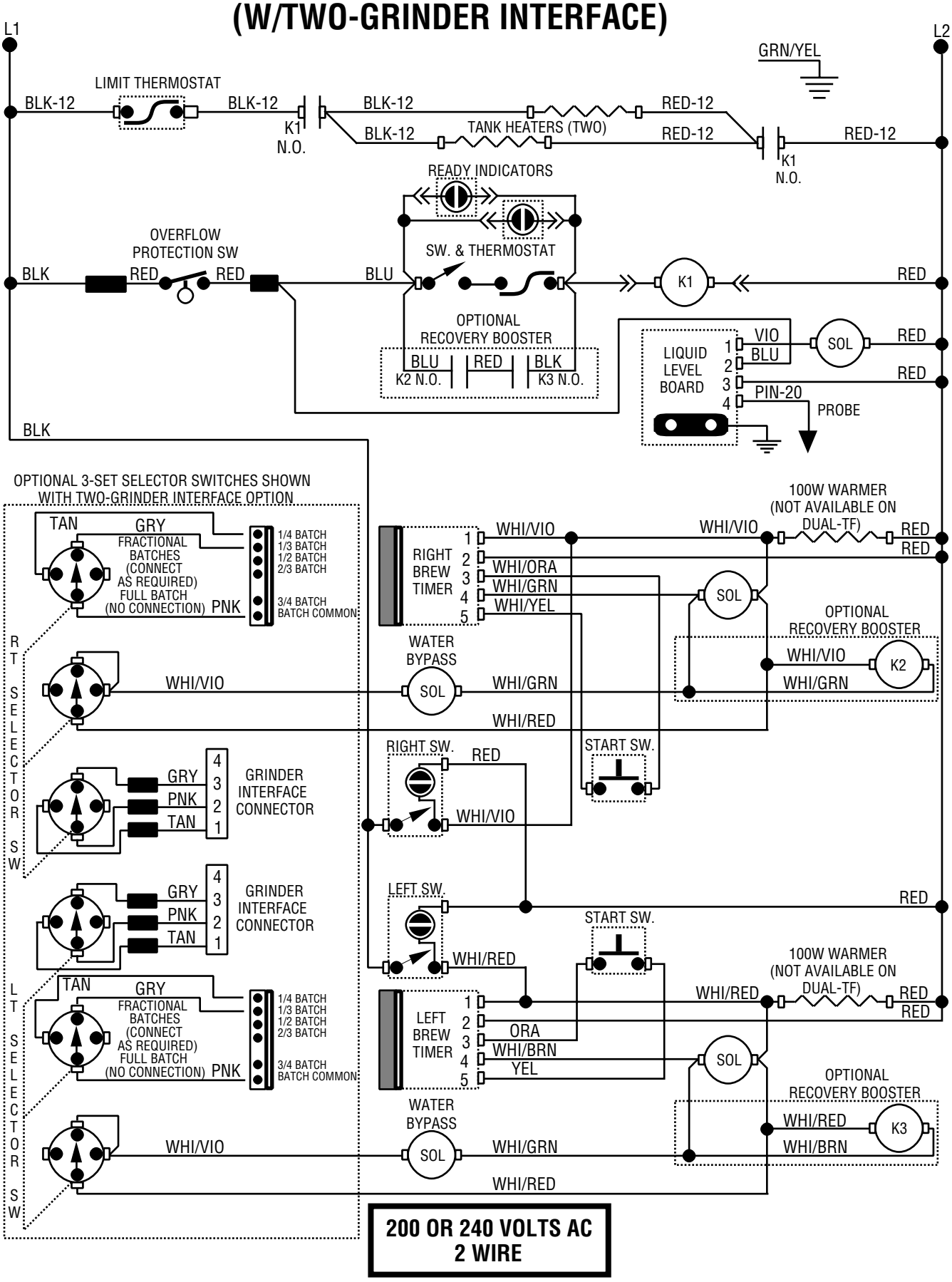
WARMER ELEMENTS



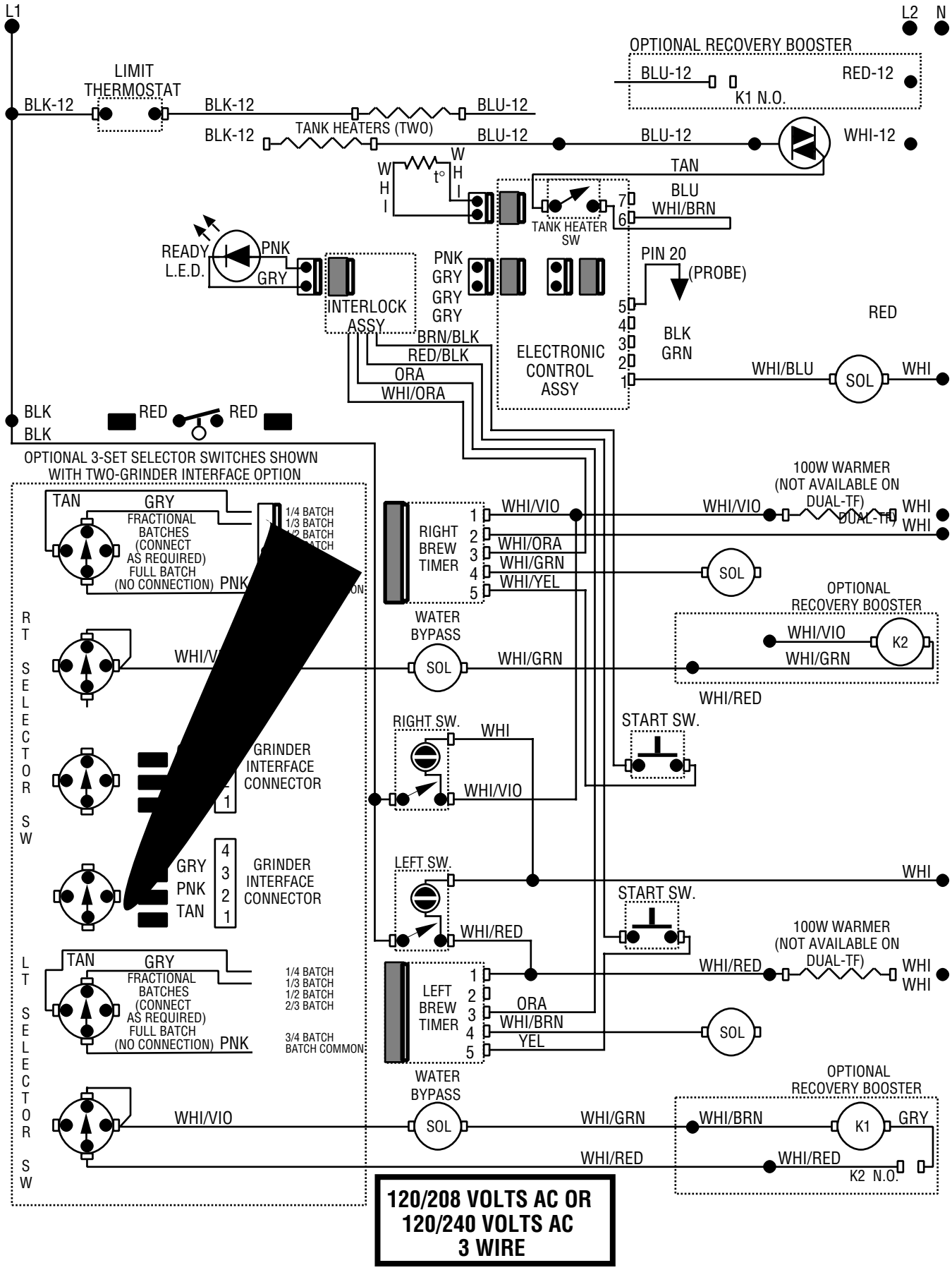
SCHEMATIC WIRING DIAGRAM DUAL BREWER (W/TWO-GRINDER INTERFACE)



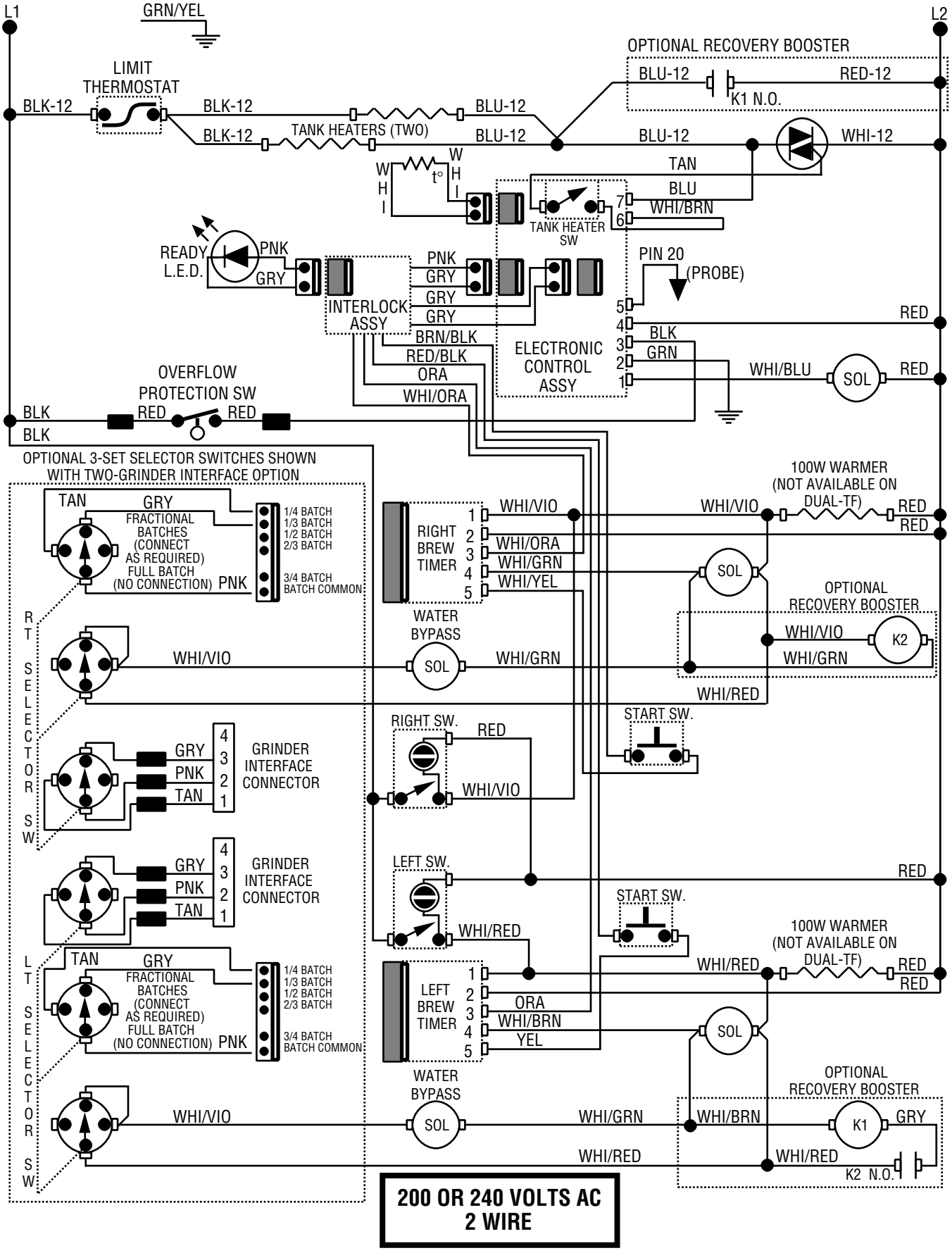
SCHEMATIC WIRING DIAGRAM DUAL-A & -B BREWER (W/TWO-GRINDER INTERFACE)



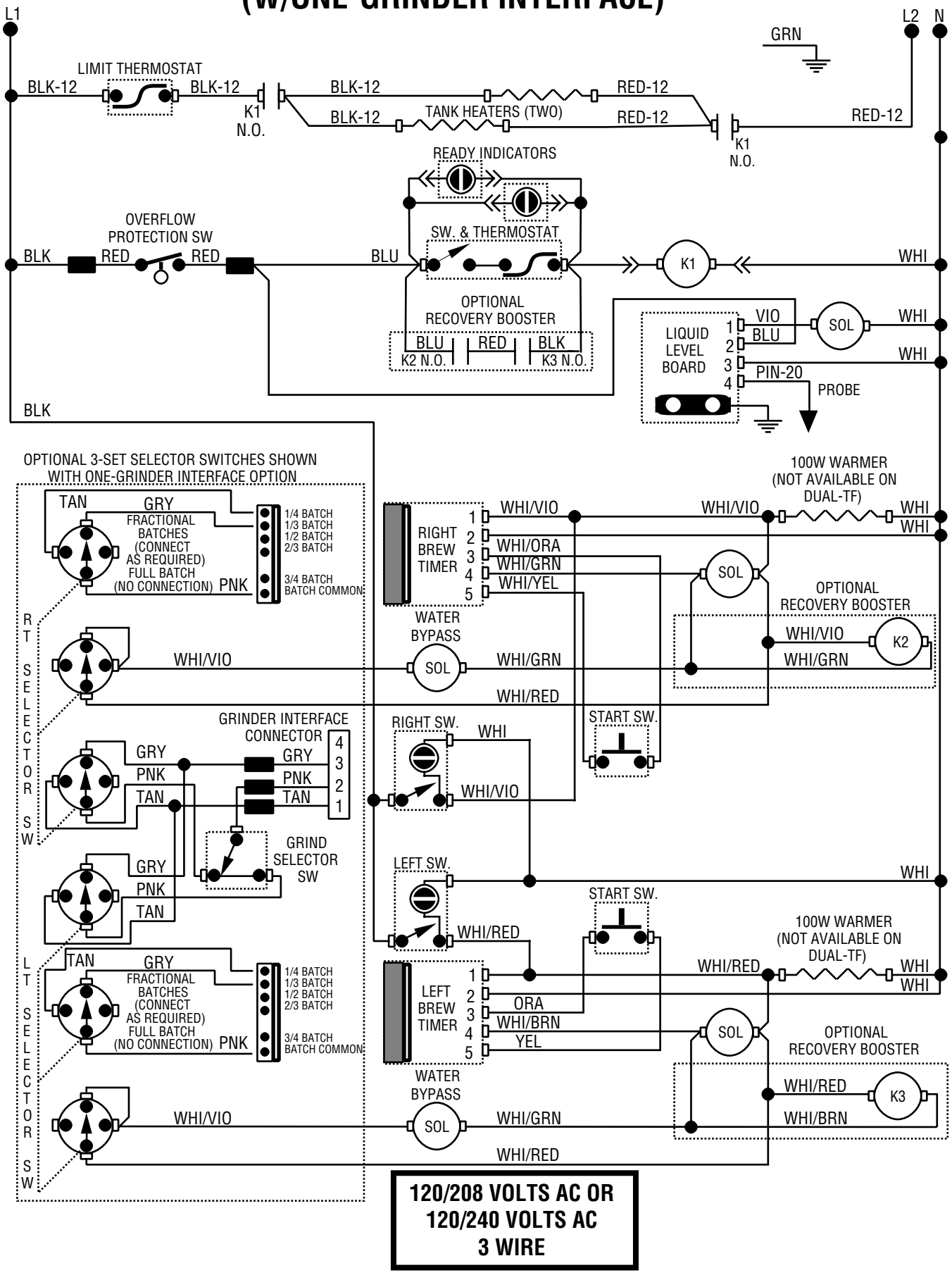
SCHEMATIC WIRING DIAGRAM DUAL BREWER ECA (W/TWO-GRINDER INTERFACE)



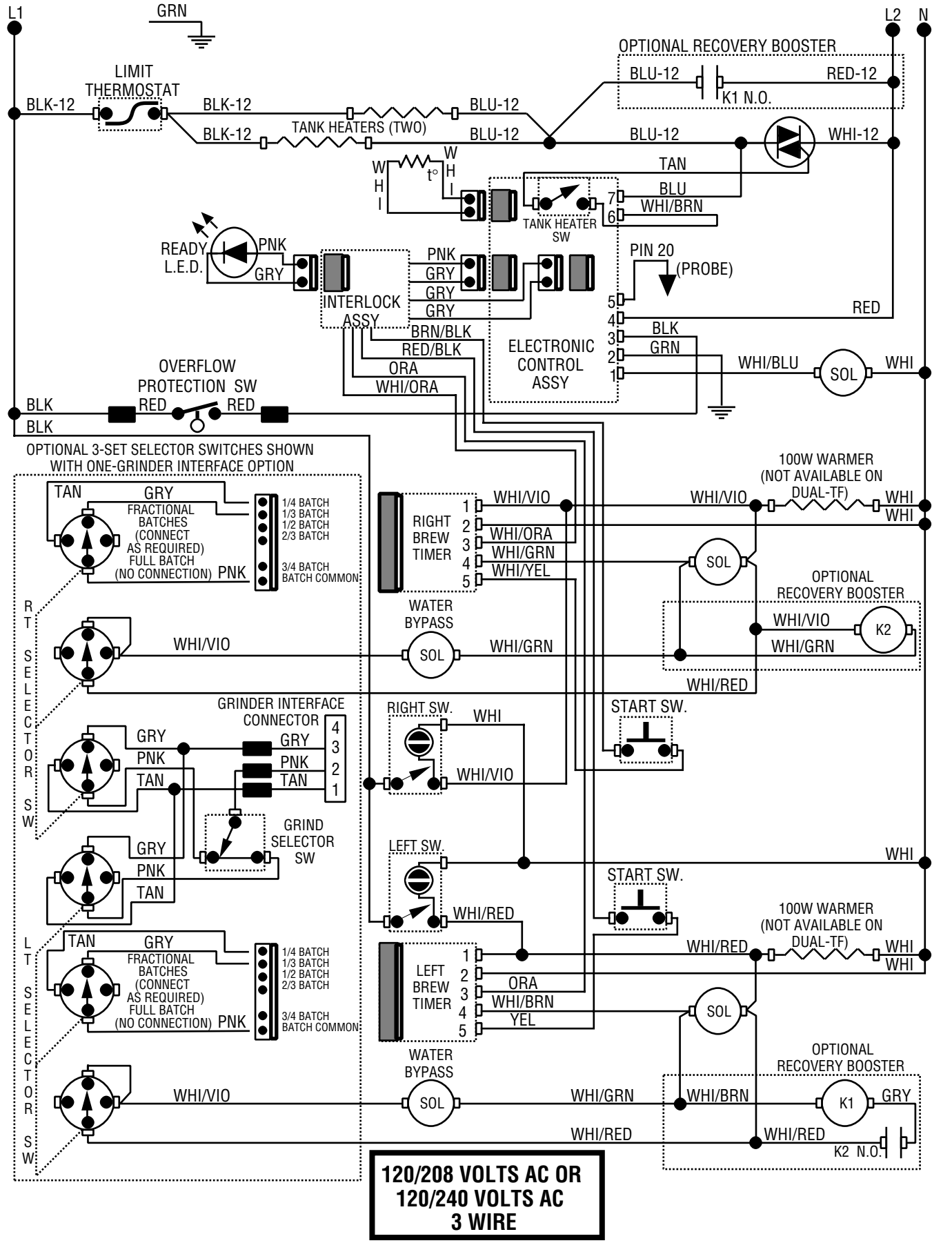
SCHEMATIC WIRING DIAGRAM DUAL-A & -B BREWER ECA (W/TWO-GRINDER INTERFACE)



SCHEMATIC WIRING DIAGRAM DUAL BREWER (W/ONE-GRINDER INTERFACE)



SCHEMATIC WIRING DIAGRAM DUAL BREWER ECA (W/ONE-GRINDER INTERFACE)



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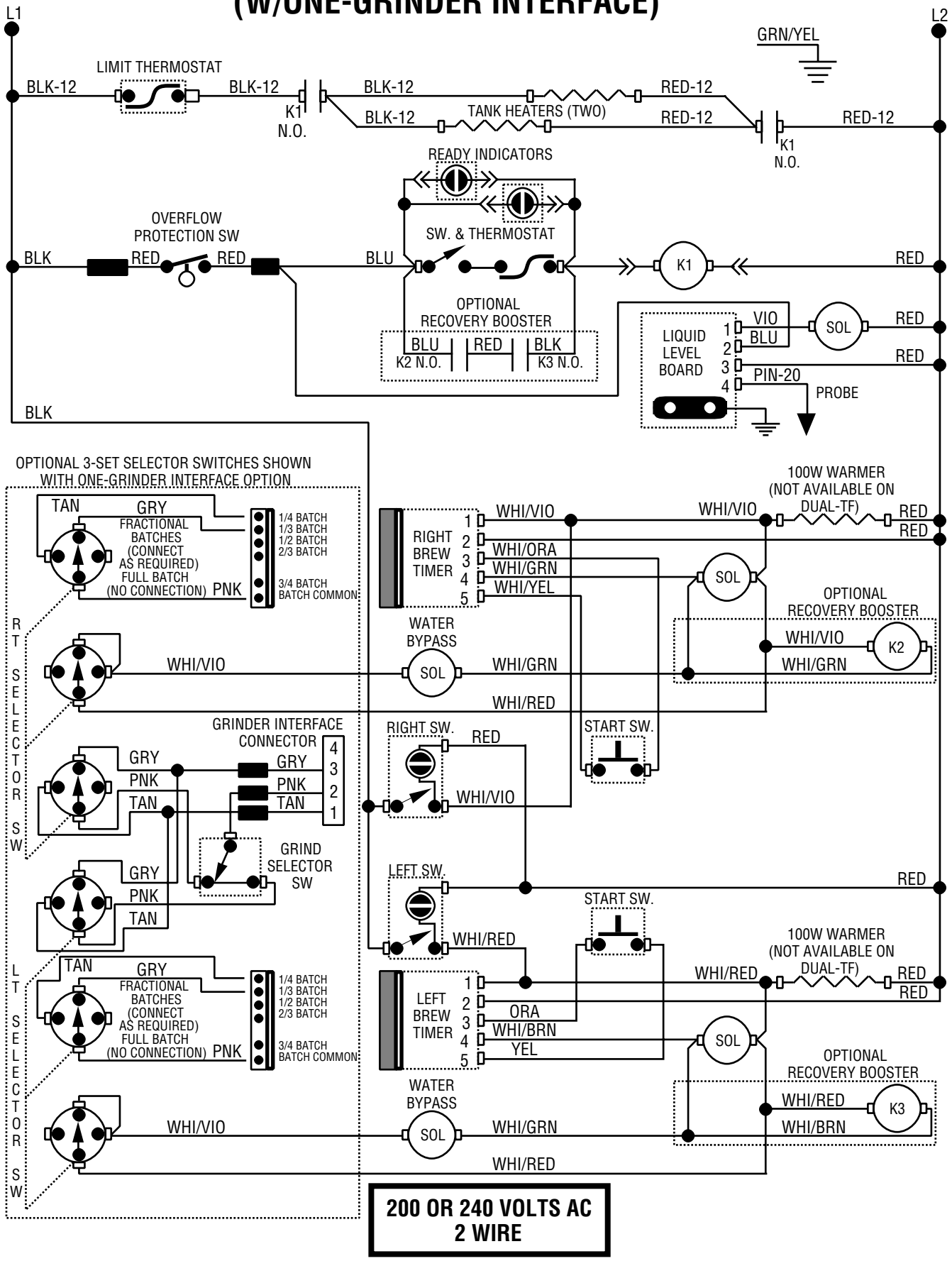
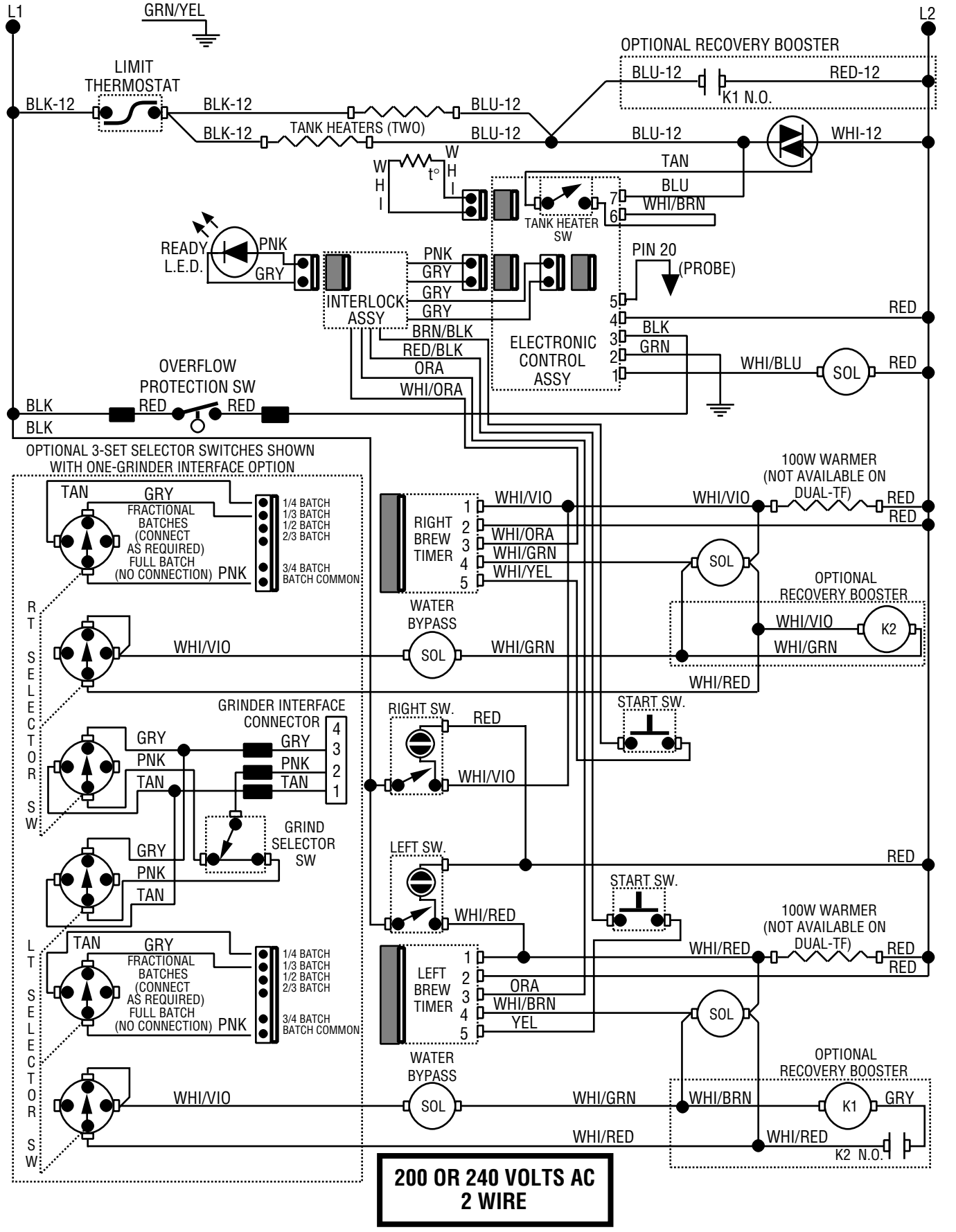
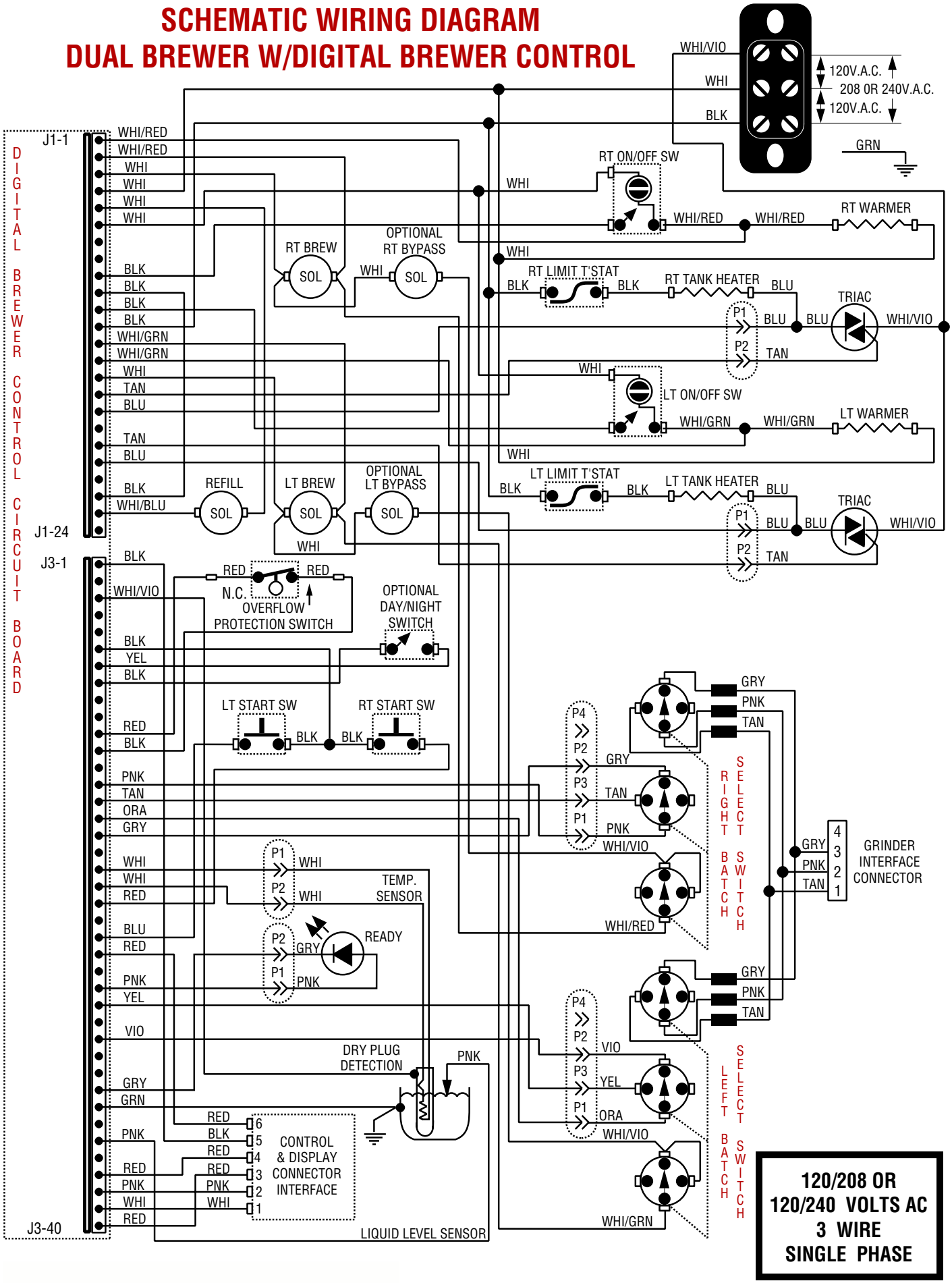
SCHEMATIC WIRING DIAGRAM DUAL-A & -B BREWER (W/ONE-GRINDER INTERFACE)



SCHEMATIC WIRING DIAGRAM DUAL-A & -B BREWER ECA (W/ONE-GRINDER INTERFACE)



SCHEMATIC WIRING DIAGRAM
DUAL BREWER W/DIGITAL BREWER CONTROL



27040 032201